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Warren K. Moorehead

A REPORT ON THE ARCHÆOLOGY OF MAINE

BEING A NARRATIVE OF EXPLORATIONS IN THAT STATE
1912-1920

TOGETHER WITH WORK AT LAKE CHAMPLAIN
1917

BY
WARREN K. MOOREHEAD
FIELD DIRECTOR, ARCHAEOLOGICAL SURVEY
OF NEW ENGLAND

1922
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PREFACE

It is a pleasure to express gratitude to the many persons who have coöperated with us and thus contributed to the success of the several expeditions upon which the present report is based.

Four men who rendered the expeditions good service have since died. They are: Arthur E. Marks of Yarmouth, Maine, who frequently left his business during the years 1912 and 1913 to take trips with us and was able to furnish valuable information; Charles A. Perkins of Wakefield, Massachusetts, who served with us for parts of two or three years and travelled through Maine and New Hampshire to secure data; Donald F. Eldridge of Orland, Maine, a member of the expedition of 1912 and later one of our regular workmen, who enlisted in the Navy and died off the coast of France while in the service of his country; and William Hutchings, Jr., also of Orland, one of our workmen, who died while with the American Expeditionary force in Germany.

To Charles C. Willoughby, Director of the Peabody Museum of American Archaeology and Ethnology of Harvard University, special thanks are due for the privilege of consulting his wide experience in New England archaeology. Dr. E. A. Hooton of Harvard University has kindly identified bones from the Red Paint People cemeteries, and Dr. Glover M. Allen, of the Agassiz Museum and Boston Society of Natural History, has given generous help in the identification of bones from the shell heaps.

I am indebted to Dr. A. V. Kidder of the Department of Archaeology, Phillips Academy for his kindness in permitting Mr. R. Weber to photograph certain of our specimens.

Francis B. Manning, while a Harvard student, was assistant to the Field Director and rendered very valuable service. Ernest O. Sugden of Orland, Maine, served as surveyor on each expedition except the first and during recent years has acted as assistant to the Field Director. Walter B. Smith of Brewer, Maine, formerly of the U. S. Geological Survey, has several times accompanied us as a volunteer, and his knowledge of geology and archaeology has been of great assistance. Professor George H. Perkins of the University of Vermont, State Geologist, has assisted us on several trips in the Lake Champlain region.

The Trustees of Phillips Academy have supported the work liberally, and Dr. Charles Peabody, Director of the Department of Archaeology, has frequently visited the scene of our explorations and at times taken part in the work. I especially thank Dr. A. E. Stearns, Principal, and James C. Sawyer, Esq., treasurer of the Academy for advice and support; also Dr. C. M. Fuess

for suggestions as to the manuscript. I hereby acknowledge indebtedness to Professor J. H. Ropes and Alfred Ripley, Esq., of the Trustees Archaeological Committee and to Judge John Adams Aiken for his interest in my work.

Marshall C. Allaben of New York, a student in the Academy, has given volunteer assistance in the field and helped in assembling the specimens for this report. Other students who have given assistance in the field or in the museum are John Martinez, Robert Bishop, D. K. Wright, Donald Appleton, James Brewster, Fred B. Lund, Jr., and George Valliant. My sons, L. K. Moorehead and S. P. Moorehead, have also served on several of the expeditions. A roster of all who accompanied the various expeditions will be found at the end of this volume.

In the course of his work as an archaeologist the writer has carried on explorations in more than twenty states, but nowhere has permission to excavate or to make observations been more freely accorded than by the hundreds of persons to whom we have had occasion to apply in the State of Maine. To the following persons on whose premises explorations were made our thanks are due, and equally cordial thanks should be expressed to a much larger number who freely gave us the desired permission but on whose land exploration was not actually undertaken.

Boyd Bartlett, Castine
L. C. Bateman, Lewiston
Fred and Benjamin Blodgett, Bucksport
Nathan Boynton, owner of shell-heap at Lamoine
Hugh Brown, Sargentville
George Budge, Mattawamkeag
The Butler heirs, Egypt Bay
H. E. Capens, Moosehead Lake
Zachariah Chafee, owner of Bean's Island
Captain I. L. Crabtree, Mount Desert Ferry
Ebenezer Eldridge, Orland
Fred Godfrey, Oldtown
George H. Grant, Ellsworth
Great Northern Paper Company, Millinocket
Mrs. Haines, Philadelphia
Captain S. N. Hartford, Orland
Coburn Haskell, Blue Hill
S. H. Hathaway, Passadumkeag
Dr. J. Howard Wilson, Castine
Mrs. Hill, owner of Hog Island, Penobscot Bay
Mrs. W. S. Hodgkins, Lamoine
Hollingsworth-Whitney Company, Moosehead Lake
Fred J. Holway, Orland

The Huggins Estate, Castine
Seth R. Hutchings, Orland
Jones Brothers, St. Francis, N. B.
E. A. Kennard, North Windham
Fred Lancaster, Winslow
Professor F. B. Loomis, Amherst, Mass.
Maine Central R. R. at Sullivan Falls
Thomas and F. Augustus Mason, East Orland
Allison McCain, Mattawamkeag
John McCain, Mattawamkeag
Albert J. Phelps, Damariscotta
Frank Pierce, owner of Emerson Point, Lake Alamoosook
James A. Pulsifer, Auburn
William A. Richards, Waldoboro
Riker and Company, Kineo Hotel, Mount Kineo
Montgomery Rollins, Boston, Mass.
C. M. Sawyer, Freeport
Mrs. Guy H. Scull, North East Harbor
William Shaw, Greenville
Dennis R. Soper, Orland
Parker Spofford, Bucksport
John F. Sprague, Dover
George Stevens, Warren
Mrs. Louise Stover, owner of shell-heap at Sorrento
Charles Stratton, owner of Burying Island
Milton W. Stratton, Bar Harbor
Samuel Tarr, Warren
Mrs. Teagle, New York
George Truax, St. Albans, Vermont
E. Von Mach, Castine
P. H. Vose, Bangor
Charles H. Wentworth, Oakland
E. T. Wing, South Portland
J. E. Witham and Bob and John Soper, Lake Alamoosook

Dr. George A. Wheeler of Castine who, in 1875 wrote a "History of Castine," gave us much valuable information.

I also acknowledge with gratitude the coöperation of Hon. H. E. Dunack, State Librarian, Augusta; Dr. W. S. Hill, Augusta; E. M. Blanding, Secretary of the Bangor Historical Society; the late Hon. James P. Baxter, President of the Maine Historical Society, whose official letter commending our researches of the people of Maine was of noteworthy assistance; and His Excellency, Percival Baxter, now Governor of the State of Maine.

Students of New England archaeology and anthropology are asked to note that the tabulation of grave contents and specimens, which are not published in this report, are preserved in the Archaeological Museum at Andover and are available for their study there.

W. K. M.

GENERAL ACCOUNT OF EXPEDITIONS

The archaeology of New England has been singularly neglected in comparison with that of other parts of our country. Much less time and money have been devoted to its study and much less literature exists on the subject than on the antiquities of either such comparatively unexplored states as Wisconsin or Arkansas. Our colonists confined their observations to inhabited Indian villages, graveyards of the period, crudely constructed Indian forts, and other evidences of Indian occupation in historic times. Although we have in New England scores of publications dealing with early Indian history, Indian wars, and related subjects, we search the libraries in vain for a volume devoted exclusively to the archaeology of the New England States.

This seems to the writer to be due to the fact that there are in New England no conspicuous archaeological monuments, no mounds or earthworks, cliff houses or ruined buildings; while in other sections of the country ancient mounds, ruins, and other remains, of both stone and earth, stand out prominently as landmarks and at once attract attention, even from a distance. There are some small earthworks near Concord, Millis, and Andover, Massachusetts, and doubtless in other places in New England, but they are not to be compared with those of the Ohio Valley. Except the village sites, which are smaller here than elsewhere, we have practically no surface indications of aboriginal occupation. While it is comparatively easy to locate shell heaps in cruising along the coast, to find cemeteries or interior village sites we are compelled to depend upon the use of spade and testing rod. A remark of the late Dr. Thomas Wilson of the Smithsonian Institution, that evidences of prehistoric occupation of a given area are found in proportion as men search, and not according to the ratio in which they exist, is peculiarly applicable to New England.

In the early years of the Department of Archaeology of Phillips Academy* some observations were made in that part of Essex county lying nearest to Andover, and a scouting expedition was made through the Merrimac valley and on Cape Cod. A collection of stone implements was known to have been made by a Mr. Tew about the ponds in the region of Hanson, Massachusetts. These and other observations led to the conclusion that

* Established in 1901.

there was much archaeological material to be found in New England; but the active field work was for some years devoted to other parts of the country, such as the caverns of the Ozarks.

The success of expeditions working in Ohio, New Mexico, etc., and composed of large crews suggested that similar results might be obtained in New England, and that, if the material for study there seemed scanty, there was the more need of regular surveys and extensive research. A study of published material indicated that more or less archaeological work had been done in Connecticut, along the lower Penobscot, on Martha's Vineyard, Nantucket, and Cape Cod, and by Professor Perkins about Lake Champlain*; but on the whole the State of Maine seemed to offer the most promising field for scientific exploration. Especially the splendid exhibits in the Peabody Museum, made by Mr. Willoughby in the early nineties from four cemeteries of the so-called Red Paint People of Maine**, opened the question of the extent of territory occupied by this people and the possibility of correlating their peculiar culture with others.***

Important archaeological work had also been done at Moosehead by J. D. McGuire and by Mr. Willoughby; among the shell heaps on the coast by F. H. Cushing, by Professor F. W. Putnam especially at Damariscotta, by Professor F. B. Loomis and Mr. D. B. Young for Amherst College in 1909, and by Professor Arlo Bates; and in other excavations by various persons.† Much of this work has been published, chiefly in scientific periodicals, and much of the material gathered was on exhibition in various museums, but no comprehensive survey of the archaeological resources of Maine had been attempted.

This our Department undertook to make, with funds granted by the Trustees, and the first expedition was organized in 1912.†† In March of that year Mr. Charles H. Perkins of Wakefield, Mass., was employed to visit all known collectors of archaeological specimens living in Maine. He travelled extensively over the state, and upon such maps as were available he entered the Indian village sites and burial places, so far as knowledge of

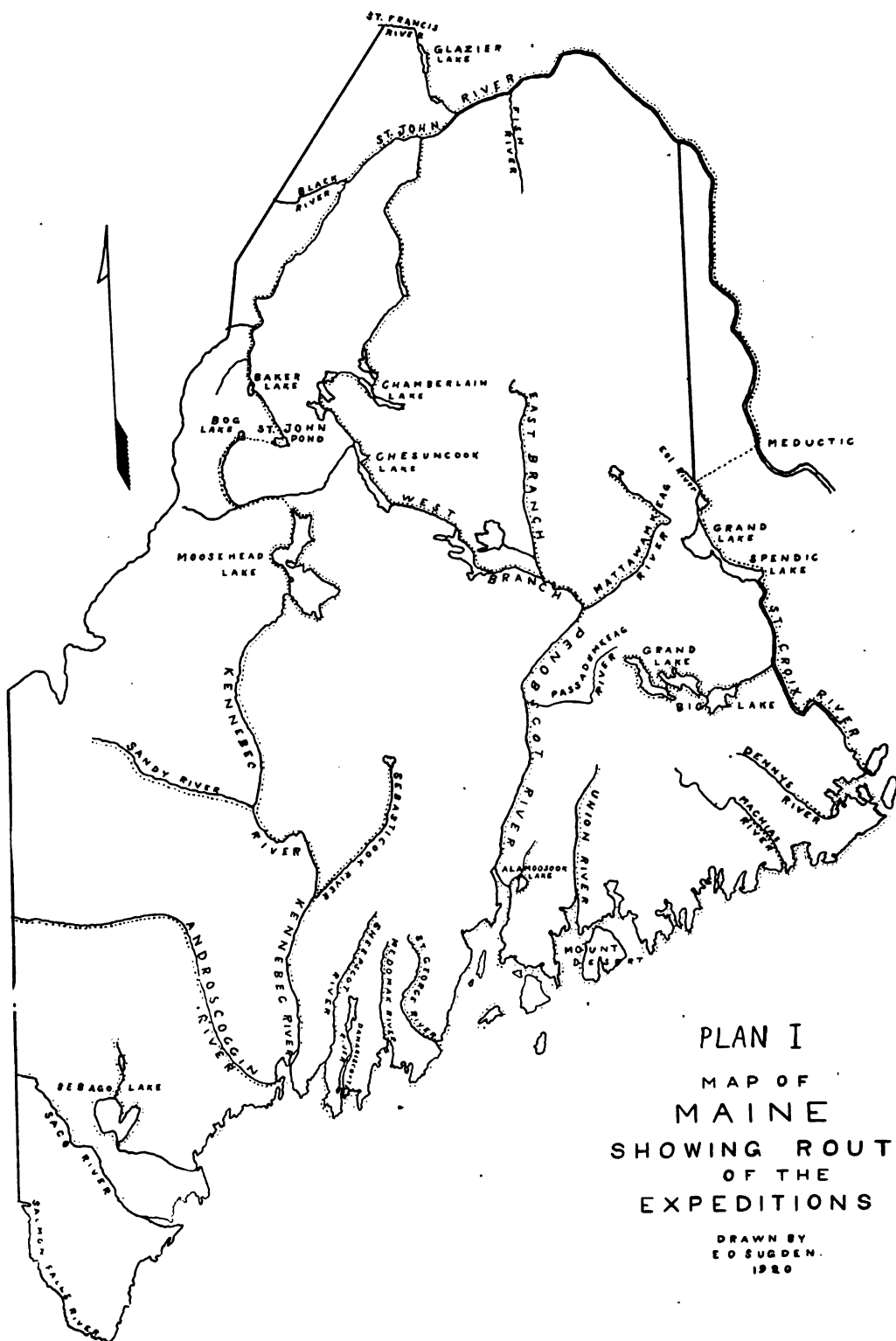
* See Reports of the State Geologist of Vermont.

** See Peabody Museum Papers Vol. 1, No. 6, "Prehistoric Burial Places in Maine." Cambridge 1898.

*** The name, apparently first used by Professor Arlo Bates, was given them because of the great quantities of red ocher or powdered hematite found in all their burial places. This is not the only feature, however, which distinguishes them from the ordinary Indian of history and tradition. They have also their peculiar types of stone artifacts.

† The shell heaps of Maine are mentioned in the Handbook of American Indians, Part 2, pp. 542 and 937. Bureau of American Ethnology, Bull. 30, Washington, 1910. For other references, see Bibliography, pp. 265-268.

†† The work of the first two years, 1912 and 1913, was done with larger appropriations and larger crews, twelve or fifteen men each summer, and the results were correspondingly more important than in subsequent years.



PLAN I
 MAP OF
 MAINE
 SHOWING ROUTES
 OF THE
 EXPEDITIONS

DRAWN BY
 E. O. SUGGEN.
 1920

them was at that time accessible. The study of this material revealed many sites along the Maine coast and through the valleys of the Penobscot, Kennebec, and other rivers. Of Indian sites in the interior of the State little was known. It had been suggested that felsite from Mt. Kineo, which the Indians worked extensively and carried to various parts of the State, might have been taken from Moosehead down the Allegash to the St. John River, and Indian sites had been reported on Chamberlain, Chesuncook, and other lakes lying about the head of the Allegash. Accordingly I went to Moosehead Lake early in May, and with Frank Capino, a Penobscot Indian, as guide, journeyed by canoe from Northeast Carry through the West Branch of the Penobscot, Lakes Chesuncook and Chamberlain, Eagle Pond and Long Pond, down the Allegash to the St. John, and down the St. John to Fort Kent, at the mouth of the Fish River, a distance of some three hundred and fifty kilometers. Many sportsmen and pleasure seekers have taken the Allegash trip, but no one seems to have looked at the banks of these rivers and lakes with a view to recording aboriginal sites. We discovered about fifteen small sites. The water being unusually high, many places at which guides reported that arrow heads and chips of the Kineo flint had been found, were inaccessible.* We attempted no explorations at this time. The trip was merely a reconnoissance.

Our regular exploring expedition occupied the summers from 1912 to 1920, omitting 1916, which was devoted by the Director to a Susquehanna exploration not under Phillips Academy jurisdiction but for the Museum of the American Indian, New York, and to the Connecticut River survey of 1919, the report on which will be published later.

The number of men in the party varied greatly from year to year, but we usually had enough to divide into several groups, so that more than one spot was being excavated, or more than one route was being followed, at the same time. The Survey has traversed a large part of the State of Maine in canoes and has made many trips by motor-boat or horse-drawn vehicle or on foot. Travel by canoe is in general by far the best method of exploration in New England, for the Indians travelled by canoe and we can move over the same thoroughfare that they traversed. On the roads, often remote from the stream, it is difficult to observe the river banks. Although travel by river has disadvantages in a thickly settled district such as that bordering

* The obliteration of archaeological sites in Maine by the erection of modern dams requires mention. On the upper waters and lakes discharging into the Penobscot, Kennebec, Allegash, and other waterways, dams ranging from four to fifteen meters in height have been built in recent years by lumber companies, and in consequence the lake levels have been raised many meters. At Lake Chesuncook, where between 1890 and 1905 Mr. Marks found many interesting specimens, a large dam has so raised the level of the lake that most of the Indian sites are now flooded. Since 1912 the lumber companies have stored even more water and it will probably never be possible to carry out archaeological researches on Lake Chesuncook or Lake Chamberlain.

on the Connecticut River from Turner's Falls down, in Maine it has proved much more satisfactory than any other method.*

Our custom has been to go first to the head of a river, shipping our canoes and camp outfit there, and to start down stream. For the first hundred kilometers or more, while the river is narrow, both banks can easily be observed from the canoes, and the expedition keeps well together. When the river becomes a hundred meters or more wide, the canoes separate, two following the right bank and two or three the left. The men are continually landing to examine the banks; often they paddle up small tributary streams as far as the canoe can be driven. In the broken river banks at various distances below the top, specimens, fire pits, and other indications of wigwam sites are often discovered.

Experience in the field teaches the archaeologist to select readily the places at which Indian remains are likely to be found. These sites are usually near the mouth of a tributary stream or upon a lake. A site which appeals to the camper of today was likewise attractive to the Indian, and we frequently find modern camp sites placed upon Indian camping grounds.

In the following summary of the territory covered, travel by automobile, train, or steamer is not included. The mileage given is the total covered by the party whether entire or in sections.** In addition to the trips noted below, a number of short ones were made by various members of the expedition, from one point to another, ranging from forty to two hundred and forty kilometers, so that it is safe to assume that at least eighty-eight hundred kilometers, or fifty-five hundred miles were covered by these surveys and expeditions.

1912

<i>May.</i>	Preliminary tour of observation.	
	Moosehead Lake and West Branch of	300 miles
	Penobscot, Chesuncook and Chamberlain Lakes,	or
	Allegash and St. John Rivers at Fort Kent.	500 kilometers.
<i>June to September.</i>	Twelve to fifteen men.	
	Bucksport, Orland, Lake Alamoosook,	600 miles
	Lower Penobscot, Sargentville, 1912 or 1913	or
	Moosehead Lake, Upper Penobscot,	1000 kilometers.
	Mattawamkeag, Passadumkeag, tributary streams.	

* Our canoes are extra wide, over six meters long and sea-worthy. Two of them have covered a distance of five thousand miles in nine States and Provinces, from the St. John River to the Susquehanna, and are still in good condition, although nine years old. They have all been given Indian names: Tecumseh, Red Cloud, Sitting Bull, and King Philip. Each will carry three persons and three hundred pounds of baggage. When so loaded they draw not over eight inches of water. With two men and ordinary luggage, six inches.

**It is of course much greater than the distance on the map from point to point. Frequently in the area of a lake not more than eight or ten kilometers long, since we are compelled to follow the entire shore line and also to work up tributary streams, we may travel sixty or seventy kilometers or even more, in order to make an observation complete.



FIG. 1. View of the Narramissic River near Orland, Maine.

1913

April and May.

Small expedition for five weeks on Sebago Lake.

300 miles
or
500 kilometers.*June to September.* Twelve men.

Toddy Pond, Blue Hill, Hancock Point, Sullivan Falls, Lamoine, Union River, Frenchman's Bay, coast and islands from East of Bar Harbor to Ellsworth, Mt. Desert and adjacent islands.

700 miles
or
1160 kilometers.

1914

June to September. Twelve or thirteen men.

Moosehead Lake, West Branch of Penobscot, St. John River and tributary streams, East Branch of St. Croix River, Grand and Schoodic Lakes, West Branch of St. Croix River, Machias, Bucksport, Sandy Point.

1100 miles
or
1760 kilometers.

1915

June to September. Fourteen men.

Castine region, coast and islands, Eggemoggin Reach, Orland, Mattawamkeag River, Piscataquis River, Katahdin Iron Works, Penobscot from Passadumkeag to Castine, Georges River.

800 miles
or
1300 kilometers.

1917

May to September. Six men.

Saco River, Salmon Falls, The Weirs, Lake Champlain, coöperating with the University of Vermont.

600 miles
or
1000 kilometers.

1918

May and June. Four men.

Coast and islands from Georges River to Kennebec, Waldoboro and Medomac River, Pemaquid Pond, Damariscotta River and Lake. Small expedition on Kennebec River from below Moosehead to Waterville.

400 miles
or
600 kilometers.
200 miles or
300 kilometers.

1919

June to August. Seven men.

Connecticut River Survey.

September.

Lancaster's cemetery at Winslow, for the Bangor Historical Society.

GENERAL ACCOUNT OF EXPEDITIONS 19

1920

June to September. Eight men.

Sebasticook River and China Lake,
Kennebec and Androscoggin Rivers,
East Branch of Penobscot,
Belgrade Lakes, Wayne-Auburn region.

410 miles
or
650 kilometers.

1921

July to August.

No expedition. Curator visited Castine region and
lakes near Mount Katahdin.

PART II

THE RED PAINT PEOPLE

DESCRIPTIONS OF EXPLORATIONS — CEMETERIES

A.

BUCKSPORT. 1912.*

Early in June, 1912, the first expedition established headquarters in Bucksport, about thirty kilometers below Bangor on the east bank of the Penobscot. Here we first inspected the sandy knoll north of the town near the tannery, on land owned by Messrs. Fred and Benjamin Blodgett. Mr. Willoughby had explored this site in 1892 and removed all the objects that he could discover.** Previous to his investigation, laborers hauling sand and gravel from the ridge had uncovered a number of graves, but most of the objects removed at that time had been lost.

We made a number of excavations in another knoll near the tannery and also dug on bluffs on the Penobscot river above the Blodgett estate and on land owned by Mr. Parker Spofford, but without result. There is a fine spring about half a kilometer up the river from the tannery, and tradition averred that the Indians formerly used to camp at this place, but a number of pits sunk by our party failed to reveal any traces of burials or village here.

Some of our men were sent up the river from Bucksport, and they examined both the east and west banks near Winterport and also at points as far as ten kilometers above that village. Evidences of ordinary camp sites were discovered, but no large village site and no burial place could be found. There are no surface indications, and in order to determine positively whether there are cemeteries of the Red Paint People between Bucksport and Bangor it would be necessary to dig upon every estate bordering the river for the entire distance. This is true of all sections of southern Maine.

It was stated by several older residents of Bucksport that when the foundations were dug for a number of houses along Main street, sixty or seventy years ago, great quantities of red ocher and the gouges, plummets, celts, and other objects usually found in Red Paint cemeteries were uncovered. There are a number of witnesses to these discoveries living at the present time in Bucksport.

* See Plans I and XII.

** See Peabody Museum Paper I, 6, pp. 17-30. Cambridge, 1898.

ORLAND. 1912

After some observations at Bucksport, the survey moved to Orland, a village situated about four kilometers south of Bucksport, at the head of tide water on Narramissic stream, called by some Orland river. The Narramissic is fed by Lake Alamoosook, a beautiful pond of fresh water some five kilometers east of the village of Orland. On the shores of this lake occur three cemeteries at distances of not more than two kilometers from one another.

At Orland we found the Narramissic flowing in a picturesque little valley. There is a dam here which furnishes power for a saw mill and a grist mill. Above the dam the water is fresh; below, it is salt, and small schooners tie up at the wharf below the dam. In Indian times there were falls two or three meters in height where the dam is now located. On either side of the stream at this point there are high, steep hills, as the river has cut out a miniature gorge on its passage to the Penobscot. The banks flanking these hills were favorite resorts for aboriginal fishing parties, and numerous spears, plummet, celts, and axes were left about the valley.

All about Orland are evidences of the Kineo felsite, not only in the burial places but more especially upon the village sites or scattered generally throughout the region. On the shores of Lake Alamoosook at low water one could pick up great quantities of this material brought from Mount Kineo by the Indians in ancient times.

Mr. Fred J. Holway owns a large farm overlooking the Narramissic river and lying on the right bank of the stream below the village at the crest of the hill, some thirty or forty meters above tide water. In opening a sand pit on this farm many years ago, the workmen discovered numerous graves of the Red Paint People and a large number of implements were secured. Many of these were obtained by Mr. Marks of Yarmouth and are now in the Andover collection. A few were taken to Bangor and placed in the collection of the Bangor Historical Society. Unfortunately in the great fire at Bangor in 1910 the collection was entirely destroyed. It contained some of the finest objects ever discovered in the State of Maine and the loss is irreparable. Such losses emphasize the need of fireproof museums in all cities.

Although we labored assiduously for several days on the Holway farm, we found no more graves. The cemetery apparently occupied a space of thirty by twenty-five meters and was entirely dug out during the process of removing sand and gravel. We discovered some fire pits a hundred meters east and south of the gravel pit, but in them there was only the usual charcoal and burnt earth, with no animal bones and stone implements. Although we employed ten men and sunk upwards of one hundred holes, we found only one rough, unfinished plummet during our search of the premises. There are indications of chert, argillite, and slate chippings on the surface,



FIG. 2. One of the Expedition Camps, 1913, on the Penobscot river.

and as the ground was favorable for a camp site, it had probably been occupied by Indians. Tradition has it that long ago the Penobscots built weirs at the falls and thus obtained shad, salmon, alewives, and other fish, as they were ascending or descending the river. The oldest settlers remember that the Indians used to camp at this place while engaged in fishing.

HARTFORD'S CEMETERY.

Near the village and on the same side of the stream, is the farm of Captain Seth N. Hartford, facing the turnpike known as the Ellsworth, Bucksport, and Bangor Road, and running back toward the river. Mr. Ernest O. Sugden of Orland, who took great interest in our work and afterwards went on all of the expeditions, informed me that near the two barns owned by Captain Hartford he had picked up several plummets and gouges, but had not observed any red paint. Mr. Valentine Soper had also found specimens at this place. In the east side of a steep hill just north of the two barns, the town of Orland had opened a gravel pit, which had been in use for some ten years and was worked back forty meters from the road, leaving the bank now several meters high. The boys of Orland had formerly found a number of graves at a point half way between the original edge of the bank and the present bank.

We dug numerous holes along the knoll just west of the present gravel bank, but were unable to find any more graves. The soil here is ordinary clay. The east edge of the bank, which has been removed, was composed of sand, and the Red Paint People preferred above all things to place their cemeteries in a sandy flat or a sandy ridge. We have often found burials in gravel but never in clay. It is therefore probable that the graves removed in the course of excavating the gravel were all the graves in this particular ridge. To make certain, however, we carried on extensive operations for two or three weeks over Captain Hartford's farm. He permitted us to cut the hay, and after this was done we put a force of eleven or twelve men at work digging test holes all over the ridge as far back as two hundred meters from the barns. We also dug on the slopes of the ridge to the south, or towards the river. This labor produced only negative results.

Finally graves were discovered in the space between the two barns, not far from the ridge. This yard is rather low, and few cemeteries have been found in such a location. We staked off an area about a hundred meters square, of which Plan II shows the part containing the barnyard, the barns, and all the graves discovered. It should be borne in mind that more ground was excavated than is indicated on the map, as this naturally includes only the space in which graves occurred. This is true of all the sites which we explored.

Apparently the area had been disturbed even before the barns were constructed. The land was first cultivated about a century ago, and plowing

had disturbed the graves nearest the surface, for some interments were not more than twenty or thirty centimeters below the sod. The deeper graves contained more objects than the shallower ones, and the ocher was brighter. Near the surface were some deposits of red ocher and discolored soil in which no implements were encountered. Most of these finds indicated a disturbed condition, and it is therefore reasonable to suppose that the implements had been removed through plowing.* As there were two barns and a shed surrounding the barnyard, it had been much in use. The loam had been carted off from a space twenty-five by twenty meters in extent between the buildings and the surface covered with a heavy, whitish clay. Hence all graves originally in this space were either completely destroyed or for the greater part hauled away. It is fortunate that not all the graves were in the barnyard.**

A study of the thirty-nine interments opened at this place, in addition to numerous deposits of red ocher in which no implements were found, leads one to believe that originally there must have been upwards of a hundred burials in this cemetery. We assume that they all occupied a comparatively small space, perhaps thirty by forty meters. To the south, the west, the north, and the east of this area, we could find no burials. At these points the soil is either clay or gravel or contains large stones. Doubtless the Red Paint People tested the ridge and deposited their dead where digging was comparatively easy, that is, in sand or sandy loam.

The graves having been in many instances disturbed, we can state only with reservation that the contents varied from two or three objects to as high as ten. I am of the opinion that graves containing five or more objects were absolutely undisturbed, and that those containing from one to four objects, unless deeper than forty or fifty centimeters, had been disturbed.

A study of the graves indicate that gouges predominate. In contrast to the Emerson cemetery,† polished slate spear heads are rare, only two or three being found. In general there was less slate used by the people occupying this site than chert or Kineo felsite. There is uniformity as to workmanship and art as a whole, but some individual graves are strikingly differ-

* During the exploration of all the cemeteries near Bucksport we occasionally discovered objects which were entered on our field notes as "strays." However, after going over the notes very carefully and studying the collections, I am of the opinion that these are not all strays, but that some were originally in the graves of the Red Paint People and have been disturbed by the plow or by those who were digging in search of specimens.

** The details of most of the more than four hundred and forty graves found by us in Maine in 1912 and later years, will be omitted in the report, only certain important ones being here described, but tables have been prepared of which the Department of Archaeology will be glad to forward a typewritten copy to anyone who wishes to learn the contents of every grave. The field notes, which would fill more than two hundred pages if inserted here, state all particulars, setting forth in detail the position of the grave and the distances of the various objects from one another.

† See page 34.



FIG. 3. Grave 2, Hartford cemetery.

ent from the average. Many of them contain practically the same things, while other single graves may show a preponderance of plummets, or of celts, hatchets, and adze blades, or of gouges. One individual might have three or four polished stone hatchets buried with him, and another two or three gouges and two or three celts and a plummet or two.

In nearly every grave there was a fire stone, or fragment of decayed iron pyrites, of the same character as those found by Mr. Willoughby at Bucksport and in the natural mound on the shores of Lake Alamoosook. Nearly all of the graves contained also a pebble more or less smooth and usually quite small, about the size of a marble and of some bright color. These pebbles occurred also at the Emerson and Mason cemeteries, and the workmen called them "lucky stones." They are not to be confused with hammer-stones. At first we thought them to be natural to the soil — a part of the light gravel — but their persistent occurrence indicates that they were introduced intentionally. They might have been used to grind up the red paint, but most of them are too small to have been of real service for this purpose and few, if any, show traces of wear. Possibly the paint was so soft that it did not abrade the surface of the stone.* In many graves in all the cemeteries examined there were rounded smooth stones as large as eggs which may more probably have served as paint grinders.

From the discoloration of the sand from one-third of a meter to one meter beyond the deposits, we may infer that a considerable quantity of ocher was placed with each interment. A small amount of ocher would not, I believe, discolor such an extent of soil. Sometimes the men found color a few inches above implements, but usually it extended beneath or beyond and on all sides. The stone implements lay in this ocher, and we may surmise that quarts of it were placed in each grave. Later in other cemeteries, we have found as much as a bushel in one grave. For the origin of the red ocher, see p. 133.

Before photographing a grave, the objects were cleared of earth and ocher, and after the negative had been taken they were removed. It frequently happened that there were several smaller objects beneath the deposit of ocher containing the large ones; hence some of our negatives show fewer objects than the catalogue indicates as taken from those particular graves. Again, objects may occur fifteen or more centimeters apart, and it is sometimes difficult to decide in which grave they had been placed.

Usually the stone implements lay together or but slightly separated. Generally they had been laid flat, grooves of gouges uppermost, but occasionally they were turned at an angle, and often were slightly sloping or elevated at one end, especially in the case of the graves nearest the surface. No uniformity was observed by the ancient people in placing these burials.

* For another suggestion, see p. 56.



FIG. 4. Grave 3. Hartford's Cemetery.

That is, the celts, gouges, plummets, fire stones, small pebbles, spear points, or other objects were not laid with reference to the points of the compass and not always placed side by side. Sometimes three or four would be found as much as twenty or thirty centimeters away from the others. While such objects were entered in the field notes as from one grave, they may represent two burials, although I doubt it. Where such deposits were as much as half a meter apart and the discoloration of the sand did not extend from one to the other, we entered them as separate graves.

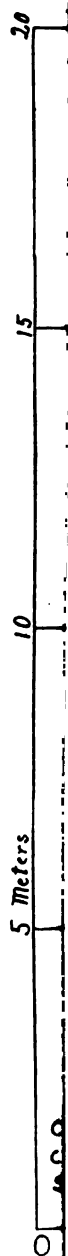
In his exploration of the knoll at Alamoosook, Mr. Willoughby possessed an advantage over us, in that the site had not been previously disturbed to any appreciable extent. It had not been plowed, it was covered with trees, and the graves were on the average deeper than our graves. He was consequently able to trace some of the fire pits dug by the Red Paint People,* whereas in most of our excavations we could not distinguish them, and Hartford's barnyard in particular, although carefully dug over, revealed but one well-defined fire pit. No matter how carefully we scraped the sides of our trenches with a hand trowel, we could not determine where the disturbed sand ended and the natural sand began. Subsequently we hand-trowelled whole sections of a cemetery in our efforts to trace grave outlines, as will be set forth later in this volume.

In all my previous explorations — and I have dug up nearly thirteen hundred skeletons during the past thirty years — I had never (before) examined places appearing so old that the implements and the ocher were the only positive evidences that primitive excavations had been made. Here, however, many even of the gouges, plummets and celts presented evidences of disintegration. This was observed also at Emerson's and elsewhere. Whether the crumbling and weathering is due to action of the ferric oxides I do not know. There appeared to be more decay on the specimens from graves than on those found upon the surface, as on village sites, etc.

The materials of which the tools were made are granite, sandstone, metamorphosed slate, trap, limestone, and some materials not yet identified. There are some fragments of slate, probably rubbing stones and slabs on which paint was ground. The gouge from this cemetery shown in fig. 16 (left), the largest gouge that we have seen in any public or private collection, is of sandstone. It is forty-three centimeters long.

The Red Paint People are characterized by their gouges, which rank as good examples of stone-age art in the manufacture of implements. The edges of many of these gouges are not only very sharp, but beautifully worked. Indeed they are made as thin and sharp as it is possible to work stone. The edges are frequently curved gracefully, as is indicated in fig. 17, the

* See Peabody Museum Papers, I, 6, pp. 30 ff.



one to the left in 19 and the central one in 20. Several types are to be observed: the ordinary gouge with groove rectangular in outline, the gouge in which the depression is drawn to a point one third of the distance from the cutting end, and other specialized forms.

The two in fig. 17 have rectangular grooves, but the interesting feature lies in the graceful curve of the cutting edges.

A few ornamental stones and one or two that apparently are effigies were discovered in the Hartford site. In one of the graves we found the outer surface of an ordinary concretion, worked hollow and used, I suppose, as a cup. It was found filled with red paint.

In or near Graves 33 and 34 were two flat sandstone slabs, thirty and forty centimeters in diameter and about two centimeters thick, with surfaces apparently polished or worn. They seem too thin to serve as mortars. Possibly paint was worked on them, but their use is not certain.

Our field notes on Grave 18 are inserted here, to give an idea of the general character of observations in the field.

"Grave 18. This was 68 cm. down in sand and immediately north of the barn. (See Plan II and Fig. 7). Fully a quart of bright red ocher was taken out and there was much more mixed with the sand. 68 cm. east of the main deposit and 35 cm. higher up occurred two large plummets, one badly decayed, associated with a quantity of ocher. This was probably a second burial, but was classed with grave 18. The objects were as follows: Two large gouges, well made, 33 cm. and 21 cm. long; lay N. E. and S. W., bits to the N. E. About 33 cm. east lay four other gouges and celts at right angles to the first two. One of these celts was badly decayed by a lump of pyrites which lay at its smaller end. The bits of these four objects were turned toward the first two and practically in contact with them. All except the largest gouge were surrounded by the ocher. There were three lumps of pyrites and numerous small fragments of the same, but no hammer stones."

"The barn was tunnelled under about five meters in from the east wall and the trench was mushroomed at the end. Several large masses of ocher, spread in layers, were encountered 70 cm. down, which contained no relics."

"On the original surface where the barns are, were evidences of an Indian camp site — cores, chips, and 'turtlebacks'; also some ashes and charcoal."

Three years later, on June 14, 1915, we returned to Orland from Castine because we learned that men engaged in hauling gravel from the bank before mentioned, had discovered some red ocher at a point beyond the school house, where we had previously made tests.



FIG. 5. Close view of a grave at Hartford's. Size, about 1-6. A: Small adze blade; B: Large hatchet blade; C: Wide hatchet blade; D: Gouge; E: Hammerstone, lower one rough; G: Crescent; H: Pyrites; I: Pyrites, plummet and rubbing stones.

We worked the bank back some three meters, following the red paint layer to the end, and as the bank had been worked down by the gravel haulers, we were able to get a clear vertical face for some distance. This enabled me to determine that a layer of paint had been laid down by the Indians, some nine meters across at this point. As we worked into the bank this narrowed, and after three and one half meters it disappeared. As the camera would not show these faint strata to advantage, my son drew them carefully, employing colors to show the differences.

I observed that the paint layer was about two-thirds of a meter below the surface where we first encountered it but sloped gradually upward. When grave 209 had been taken out and we had worked two meters further, to the point where the red streak ran out, it was less than a quarter of a meter from the surface. Possibly some of the top of the bank had been removed at this point in previous years.

So far as I could determine, the burials had been placed upon the layer of ocher. Certainly we observed the outlines of two graves, one of which the workmen had removed. Extending from the surface downward to the bottom of the red layer were two places where the strata of sand and gravel had been broken. These pits were about one meter wide, but the length could not be determined, for the reason that the graves or deposits were so old and the difference between the natural and the disturbed soil so nearly obliterated, that we could not easily distinguish them when digging directly down. We cannot always tell where a grave begins and ends, but when the section appears in a straight gravel bank with exposed perpendicular face, the slight difference is noted. A view is presented in Fig. 18.

Here as elsewhere the paint was brighter under the deposits and fainter in the area outside of them. Either the layer of ocher was first spread over the base of a rather extended area, then the interments placed upon it and more ocher added about each deposit, or else the graves may have been dug separately and so much ocher put into each one that water penetrating through the gravel distributed enough of it to discolor the soil for some meters in various directions.*

While we felt certain that we could see the two grave outlines, as stated, yet we were unable positively to trace disturbed strata between the two graves, although very careful work was done with the hand trowel. It does not seem possible that the layer could have been placed there first, the sand and gravel placed carefully upon it, and the graves dug in subsequent years. Possibly the explanation lies in the suggestion that water carried the ocher along upon a general level or horizontal plane; but if this is true, why has not the same condition been more often observed in other cemeteries?

* For similar observations made at the Hathaway and Lancaster cemeteries, see pp. 53 and 100.



FIG. 6. Interior of Captain Hartford's barn after the graves had been examined.

If we could have found graves in the edge of the gravel pit before the teamsters began work, we might have solved an interesting problem.

LAKE ALAMOOSOOK. 1912.

Lake Alamoosook, which lies within the town of Orland and five kilometers east of the village, as has been noted, is about four kilometers long and two kilometers broad. The outlet which forms the Narramissic river is at the northwest corner. See plan III.

Several of us visited this region in June, 1912, while the other men were digging at Orland, and late in the month we rented a cottage conveniently situated at the outlet of the lake and just across from the property owned by Mr. Frank Pierce, known as the Elijah Emerson estate. We spent three weeks in exploration of this cemetery, employing local labor in addition to our own force.

After a trip to Moosehead and the West Branch of the Penobscot and on completion of our journey down the main river including the exploration of Hathaway's cemetery at Passadumkeag (see pp. 50, 55), we returned to Lake Alamoosook in August and spent three weeks more, continuing the explorations of the Emerson and Mason cemeteries. At this time we rented a more commodious cottage about half a kilometer from the Emerson cemetery and two kilometers from Mason's Landing.

In this report I shall treat the work at the Mason and Emerson cemeteries as a whole, although there were these two periods of work with the northern trip intervening. The map presented in plan III is by Mr. Sugden, who spent part of the month of October of that year in making a careful survey of the shores of the lake.

The six weeks spent at Lake Alamoosook resulted in the identification and exploration of five or six sites, two of which were the large cemeteries mentioned. There were numerous small camp sites, which are indicated on the map, but nothing of consequence was found at the points where they are located.

To the northeast of Lake Alamoosook and emptying into it is a long body of sluggish water known as Dead River, with a brook entering it five kilometers from the lake and another smaller lake or pond about three kilometers up the brook. No evidences of a considerable Indian population could be discovered, either around the shores of this pond or along the brook.

In the following summer we examined the shore of Toddy Pond, fourteen kilometers long, which is nearby and to the southeast of Lake Alamoosook. This larger body drains into Alamoosook, and the natural supposition was that more evidences of the Red Paint culture would be found here. My field notes on Toddy Pond, however, indicate no occupation of that site by any considerable number of aborigines.

The water of Lake Alamoosook has been raised about two meters by the building of a dam two meters and a half high at the foot of the lake, where there is a saw-mill now owned by Messrs. Witham and Soper. Old residents of the neighborhood informed me that previous to the erection of this dam, when the lake was at the same level as in Indian times, heaps of chips, spalls, rejects, hammerstones, and other material denoting the manufacture of implements, lay about the shore at the points indicated by the letter E on Plan III. This particularly applies to the outlet and to the bays on the north side between the outlet and Dead River, where these indications of Indian workshops are most numerous. Mr. Robert Soper, whose father assisted Mr. Willoughby in 1892 in the exploration of the mound indicated by the letter C on the map, informs me that both he and his father, when the water was very low in the lake, have discovered large numbers of chipped implements, some broken slate points, and a few celts and plummets. We examined all the shore of the lake but made formal excavations only at the two important burial sites.

THE EMERSON CEMETERY

Many years ago Captain Elijah Emerson built a cottage on a charming point of land at the north end of Lake Alamoosook, with the river or outlet flowing along the western edge of his property. The stream is but forty meters wide at the present time. There is a dam and a saw-mill at this point but formerly there were falls flanking the Emerson lot and there is a tradition that at these falls the Indians caught great numbers of fish.

It is related of Captain Emerson that he entertained many guests at his cottage but he would never permit exploration on his land, although it was known that numbers of stone implements had been picked up there. He appears to have made one exception however. Dr. Augustus C. Hamlin of Bangor, who was active in organizing the Bangor Historical Society, visited Alamoosook and asked Mr. Foster Soper, who knew the Captain well, to intercede for him. At last they were permitted to examine the land for a period limited to one day, and Mr. Robert Soper has informed me that his father and Dr. Hamlin hitched an ox team to a heavy plow and spent the day in plowing over the Emerson land to the depth of two furrows. According to Mr. Prescott H. Vose of Bangor, Dr. Hamlin brought back a large number of stone, chert, and slate objects to Bangor in a spring wagon; and Dr. Hamlin himself told Mr. Willoughby that ninety-nine implements of various kinds were secured during the day's work. After the plowing was completed and a heavy rain rendered the field suitable for searching, Mr. Marks collected twenty or thirty more implements from the surface, which are now in the Andover collection.

Mr. Frank Pierce, the present owner of the property, kindly permitted us to explore it completely and we uncovered the graves shown in plan IV.



FIG. 7. Grave 18. Hartford's. Not all the objects are shown here. Others were underneath these adze blades and gouges.

The site was found to be more disturbed than Captain Hartford's, all graves lying within forty centimeters of the surface having been destroyed, so far as scientific observations are concerned, by the heavy plowing referred to. Only the graves lying deeper appeared to be in their original condition. The cemetery occupied a space of about seventeen by twenty meters. The soil is a loose, sandy loam, in which the Indian did not find digging difficult.

We staked the field from the edge of the slope bordering the lake back toward the house for eighty meters, and numerous holes were put down along the high land overlooking the outlet, but no grave could be found save in the spot indicated on plan III.

On our second visit we extended two long trenches from near the water line to a point fifteen meters beyond where the last grave was discovered and numerous pits were dug fifty or more meters in all directions out from the cemetery, but absolutely nothing more was found.

While Mr. Pierce kindly permitted excavations at the point named, he did not wish us to dig in the lawn directly in front of his cottage. I sunk our steel sounding rod, however, in a number of places here, and as I found the soil composed of heavy clay or gravel, with considerable stone in it, I venture the opinion that no burials were made on this part of the knoll.

North of Mr. Pierce's cottage we sunk fifteen or twenty pits and found a large Indian village or camp site, with quantities of pottery fragments, chips of Kineo stone, chert, etc., and four or five gouges and plummets which were given to the owner. This was not a village of the Red Paint People, however, and no graves were found there.

All considered, there must have been at least two hundred burials made upon Mr. Pierce's property in prehistoric times.* It is unfortunate that such a place could not have been thoroughly examined before it was disturbed. If there were any fire pits near the surface, they cannot be traced at the present time. One fire pit was discovered at the south end of the slope, as is marked on the plan, but nothing was found either in it or below it. Neither at Emerson's nor at Hartford's did we discover fire pits of the same character as those found by Mr. Willoughby in the mound further east.

Where a few superimposed graves occurred, the Indians had dug down below the loam into the hard grey clay known as "hard pan". This lay on the average forty-five centimeters below the grave. A few of the deeper graves were dug into this hard layer, and just beyond the fire pit a layer of burnt earth was encountered twenty-eight centimeters down. Except for this, no traces of ash pits were found in the entire excavations.

A study of our field notes indicates that the largest number of objects found in any one deposit was twenty-one, but that graves containing one, two, or four objects predominate. More red ocher was found here than at

*Figs. 11, 12, 13 and 14 present views of the Emerson site.



FIG. 8. Grave 31. Hartford's Cemetery. A few objects are not shown, being under the bank.

Hartford's. There were sixty or more deposits of ocher or of soil discolored red, but as few or no implements were found in them, they were probably the graves that Dr. Hamlin plowed out. The deeper graves contained the same average number of specimens as were found in Mason's and Hartford's cemeteries and in Hathaway's at Passadumkeag. As was observed at Captain Hartford's, not a single trace of a human skeleton was to be discovered in any of these graves.

Although the work was very carefully done, hand trowels being used quite as much as the larger tools, no uniformity of position of artifacts is to be noted. On the contrary, as at Hartford's even in the deep graves, although the objects are lying horizontally, they are not placed in the same order. That is, the celts, the plummets, the gouges, or the problematical forms are not always to the right or to the left, nor are they grouped; and while the objects in one grave may lie northeast and southwest, in another grave they may lie east and west, or northwest and southeast.

Whether some of the tools were detached from their original handles when buried, cannot be determined positively, but it is the general opinion that when the objects are bunched together, they were already detached from the handles when so placed, but that where objects are five to fifteen centimeters apart, they were buried in their original haftings.

In some of the deeper graves large stones had been placed beside the interment or over it. See fig. 23. Frequently objects were placed at the base of a large stone, but the upper portion of these stones do not appear to have been discolored by the ocher. From the fact that only the side of the stone next the implements presented a red appearance, we would infer that the stones were placed beside the grave, or that the large stones found in the ground by the aborigines when they were digging a grave, were left there and the interment was placed at the side of the obstruction. No such stones were in the Hartford cemetery.

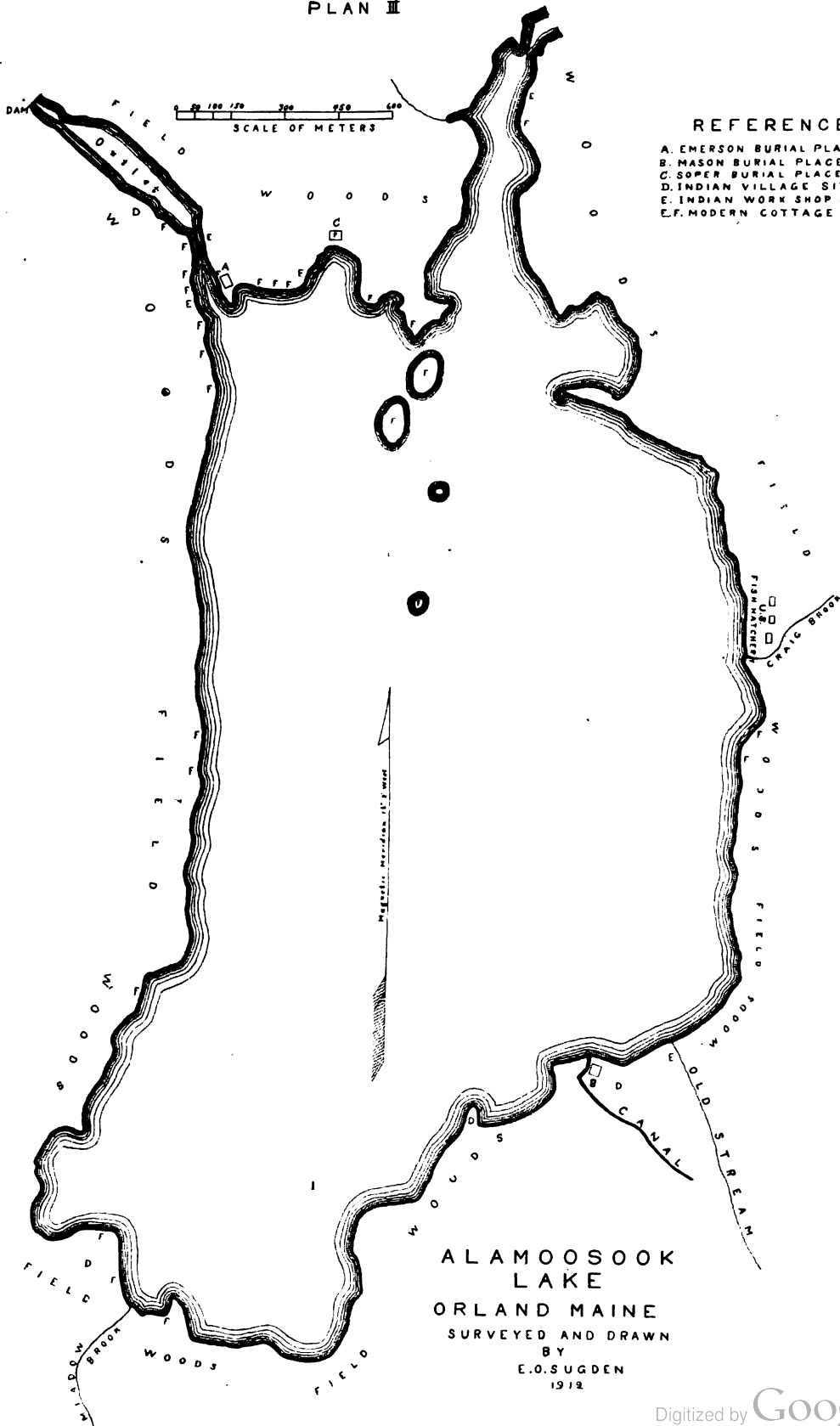
A field note on grave 64 is here inserted.

"This was a cache rather than a grave, twenty-one celts and gouges occurring in one confused pile. Two gouges lying about 45 cm. west were counted as belonging to this cache. Contents: Four gouges somewhat small, with narrow cutting edges, but widened at the middles. Five large gouges of the broad-edged type, all but one with bits so broken as to be useless; the bit of one seems to show distinct signs of alteration. Ten celts of varying sizes, but all of the same type except one, and that one, heavy and thick. These celts are all utility tools. Most of the edges are in fit condition, but three are chipped and worn. In the case of the gouges, it would seem that the broken-pointed broad ones had been brought together to be re-sharpened, the process necessarily producing a narrow-



FIG. 9. Grave containing large gouges and adze blades. Hartford's Cemetery

PLAN II



REFERENCE

- A. EMERSON BURIAL PLACE
- B. MASON BURIAL PLACE
- C. SOPER BURIAL PLACE
- D. INDIAN VILLAGE SITES
- E. INDIAN WORK SHOP SITES
- F. MODERN COTTAGE SITES

ALAMOOSOOK LAKE

ORLAND MAINE

SURVEYED AND DRAWN

BY

E.O. SUGDEN

1912



FIG. 10. Types of square-edged hatchets and small edged tools; also some plummetts and chipped objects. Emerson and Hartford Sites.

bitted gouge, though not affecting the size of the body. With the celts it would appear to be the same — the edges are either chipped and dull or smooth and sharp. The bits of the re-sharpened ones are not narrower than the dull ones, as the process did not affect the width, any more than sharpening an axe lessens the width. It would appear, therefore, that this was a cache of tools in the process of re-sharpening."

This grave is shown in fig. 21.

THE MASON CEMETERY

On the southeast side of Lake Alamoosook is a low stretch of land owned by Messrs. Tom and Augustus Mason, who reside in East Orland. The shores of the lake for a certain distance from the edge are controlled by Mr. William Shaw of Greenville, who owns the water rights. Both the Messrs. Mason and Mr. Shaw gave us permission to dig on their land, and we examined various places about this end of the lake but discovered nothing of importance until on the Mason land, about a hundred meters back from the shore at the point marked B on plan III, we found a large cemetery more or less disturbed. The owners and Mr. George F. Johnson of Boston had dug on this site many years before, and as the place is overgrown with bushes and has never been plowed, it is easy to trace this former digging. About thirty pits seem to have been put down in past years.

Since this report was written, I visited Mr. Johnson at his home in Boston and inspected his collection. He has some 85 or 90 gouges, plummets and adze blades all from the Mason site. They are of the long, slender forms such as we found.

After inspection of Mason's land, we observed that the pits sunk by Mr. Johnson lay, for the most part, along a little sand ridge, not more than a meter above the level of the lake, which runs from the edge of the water parallel with the present outlet of Toddy Pond, and has an old lumber road running along its top: We supposed that the road was in use at the time of the former excavations, as the pits were not dug in the road.

We carried a long trench for a distance of twenty meters southeast, following the road from a point on top of this ridge, and opened several graves. We then extended the trench for about forty meters to the right or west, and opened more graves, making a total of twenty-eight. A few of those near the surface appeared to have been disturbed, but many were found in their original condition. Little red ocher was found with the burials for the reason that at high water seepage is considerable, and even at the ordinary stage of water, the implements in the deeper graves lie several cm. below the water line. If we dug deeper than one meter, the water entered our pits, and interfered with further explorations. From indications we assume that the cemetery extends to the north along the sand ridge and

that many graves are now covered with water. Indeed the Mason brothers told me that previous to the building of the dam at the outlet, the cemetery on their property extended along the sand knoll at least one hundred meters further toward the northwest. Some of this space is now covered with water a meter in depth, and it would be impossible to examine the graves. About eighty meters out from the present shore line, at a spot where there is now half a meter of water, when the elder Mr. Mason was a boy, an Indian skeleton was discovered, wrapped in birch bark and buried in the sand. With this skeleton was a buckskin bag filled with large leaden slugs, and a number of other articles. This was of course a burial of the early historic period.

To complete our investigation it would be necessary to have the water in the lake lowered a meter or more for a few days, and we got permission from the owner of the water rights to have this done, but the plan was not carried out because of opposition from two owners of shore-property.* One of these men caused us some trouble. He was one of the few men in all our years of research who deliberately blocked our investigations.

We examined the ground for some distance south, or back from the lake, on the Mason land. There appears to be an extensive village site here, extending to the foot of some low hills three hundred meters distant. Bushes and grass cover the surface, and although a number of pits were put down, the place was not examined thoroughly. We observed that quantities of flint chips and rejects of the usual character and of Kineo material predominated. This was a village of the usual type, and did not have any of the peculiar kind of artifacts that are found in the Red Paint graves.

As in the case of the Hartford and Emerson sites, the graves at Mason's are placed close together, as one would naturally suppose that Indians would bury. On our plan they do not appear to be near to each other, but that is because those opened in former years by Mr. Johnson are not shown. They range in depth from forty centimeters to one meter.

On opening the graves we observed that the sand was discolored by ocher but because of the presence of water the paint was washed out and it was impossible to save it in any quantity. No large stones were discovered as at Emerson's, and the outlines of the graves could not be traced. The sand was yellow and very pure, containing only such stones as the Indians had placed in the graves.

The implements themselves did not differ from those of the Hartford and Emerson sites save that there were more plummets than either gouges or celts. Only one or two large chipped objects were found. Slate spear points were rare and no slate arrow-heads were found. One or two flat, ornamental

*It is to be hoped that conditions may be more favorable at some future time. No damage would be done to property, for the brook tributary to Dead river and the canal from Toddy pond would furnish water enough to restore the present level of the lake in four or five days.



FIG. 11. Elevation on which Emerson's Cemetery was located.



FIG. 12. Finding the first grave at Emerson's.

stones were taken out, but ornaments were not common. There was one remarkable winged problematical form (lower object in fig. 27) worked out gracefully from black slate. I have seldom seen a finer specimen. Fewer of the thin hatchet-like blades occurred at Mason's, and they were short and slender, or chisel-shaped, while those at Emerson's were comparatively thick.

The gouges from Mason's cemetery were long and slender, compared with those from Emerson's or Hartford's, and did not appear to have been actually in use. Few of them had the battered top that would be caused by driving into wood, and the edges did not appear scratched or worn but were delicately sharpened, with grooves very well defined. This peculiarity was noticed by my assistant, Mr. Francis A. Manning, who studied the gouges as they were removed from the graves in each of the cemeteries. He said that the Mason gouges were sharper and thinner and two or three of them exhibited very long slender grooves. He writes in the field notes:

"From the view point of practical carpenters, this extent of groove was not only of no use, but even weakened the cutting end. In a way it might have facilitated re-sharpening, but an examination of the bit makes it hard to believe that it was ever used in work. The thought suggests itself that these finer gouges may have been made expressly as offerings to the dead."

Typical specimens of gouges from the three cemeteries are shown side by side in fig. 20, in half size.

Three interesting and unusual graves were found extending below the water level, and it was only with great difficulty that they could be carefully examined. It is my opinion that they all represent intrusive burials of later Indians. They are marked 116, 117 and 133 on plan V. At a depth of about seventy centimeters in each of them, there was a layer of charcoal twelve to fifteen centimeters thick, composed of sticks from one to six centimeters in thickness, which had been completely burned. On this hard layer in each grave we suppose a human body had been placed, as we found part of a human femur in grave 133 and traces of bone in grave 117. Grave 117 was found first, lying above a hard bed of burnt sand about two meters in length. It contained a cylinder of dark sandstone with a large opening at one end and a smaller one at the other, also fragments of buckskin and birch bark, some minute copper beads, and what appeared to be decayed bone covered with traces of copper. There were also minute scales of red paint apparently different from our ordinary ocher, and great quantities of charcoal.

In grave 116 there was some decayed buckskin and a few copper beads, together with a mass of coal-black earth. Evidently this black mass is the result of decay of some unknown substance, whether hides or fiber, or coarse



FIG. 14. The trench begun at Emerson's.



FIG. 15. Grave 74, Emerson's.

cloth, I am unable to state. In this grave occurred a cylinder of reddish sandstone about sixteen centimeters in length, which is shown in fig. 30. There was also a large, fine knife of black flint, a material foreign to Maine, so far as I can judge. This is about thirteen centimeters in length. Associated with these objects were two rough pebbles which, but for their being in the grave, one would not suppose to have been used by primitive man. There were traces of decayed bones embedded in the black mass, also a few scales of some grayish substance. A few bits of brilliant red pigment were taken out, which was not the red paint common in other graves, but a different substance. The copper beads number possibly thirty or forty, and there were some minute fragments or scales of oxidized copper. It is quite probable that a greater number of beads were placed with the interment than we discovered. Some buckskin, badly decayed, was taken out.

These two graves contained no objects of the Red Paint People type, and no deposits of powdered hematite. Although the ground was very carefully searched for some distance about these graves, and the muck and decayed charcoal was sorted over by hand, nothing more was discovered here.

On the last two days that we worked at Mason's we employed a force of thirteen men, but were unable to find graves in the large space noted on the plan between graves 121 and 122, and 119 and 128. For a distance of three by eight meters the ground had been almost completely dug out by Mr. Johnson, many years before. There was one undisturbed spot in the center, however, when the men abandoned work in this area and continued explorations elsewhere. My son, Singleton Moorehead, was interested in our work, and although at that time quite young he dug industriously and spent most of the day in sinking a pit. Presently he announced that he had discovered a thick layer of charcoal, and I sent two laborers to assist him.

Just above the water line, something more than a meter below the surface, was an unusually heavy layer of charcoal, extending horizontally at least two meters in all directions. Wood had been burned on the spot, as the sand beneath was baked quite hard. A human body had been laid on the charcoal, and of the skeleton we secured a fragment of femur nearly twenty centimeters in length. There were traces of other bones, but none of them could be removed save in fragments. A large quantity of buckskin accompanied this interment and pieces eight to fifteen centimeters in diameter were secured. With the buckskin forty or fifty small copper beads, five to ten millimeters in diameter and all very badly corroded, were removed. As in the case of graves 116 and 117 we shoveled out great quantities of muck, sand, charcoal and mud, and spent hours in working over the material, but were unable to discover any implements.

PASSADUMKEAG. AUGUST, 1912

At the town of Passadumkeag, about forty kilometers above Bangor, the stream of the same name enters the Penobscot from the east, and at this point, so the river men say, the river is as wide as at any point above Oldtown. That the place was inhabited by Indians in historic times is well known. There are numerous indications of this occupation about the village.

Down stream on the west bank about two kilometers below the town there was a large camping place, where much pottery and many chipped stone implements have been discovered. This site may or may not have been of Algonkian culture; we did not examine it thoroughly, but confined our exploration to cultures manifestly belonging to the Red Paint People.

A number of graves had been opened in former times on the flat occupied by the village of Passadumkeag, and the people told us that red paint and specimens were often found there, but we were unable to discover any cemetery, although we dug in a number of places in gardens and fields.

HATHAWAY'S CEMETERY

Four kilometers up the Passadumkeag on the left bank is the farm of Mr. S. H. Hathaway. His home is situated on a beautiful knoll twenty meters above the river and commands a view of the surrounding county. To the east and northeast is an immense tract of low land, almost a swamp, which was in early days a great resort for moose. The guides Alonzo Spearin and George McCain, who were familiar with this region fifty years ago, said that some of the best hunting in the State of Maine, years ago, was to be had on Passadumkeag stream.

About thirty meters south of Mr. Hathaway's residence, just above the slope of the hill toward the river, we found an interesting cemetery of the Red Paint People. It occupied a space fifteen meters square with one grave eleven meters farther south, as shown on plan VI. There were no burials, so far as we could ascertain, on any other portion of the Hathaway farm. We dug extensively but found nothing.

Except for surface plowing sufficient for planting a garden, the ground of the cemetery was in its original condition, hence we were able to carry out a proper research. We examined a total of seventeen graves, all but one or two of them being within the fifteen-meter square, and we removed something like ninety objects. These were larger than the objects found about Lake Alamoosook and at Orland and the average number in a grave was considerably higher, this being additional indication that the graves had not been disturbed. The largest grave contained eighteen objects, one of which



FIG. 16. To the left, front and side view of long gouge from Hartford's site. To the right, front and side view of gouge from Hathaway's. Size 1-3.

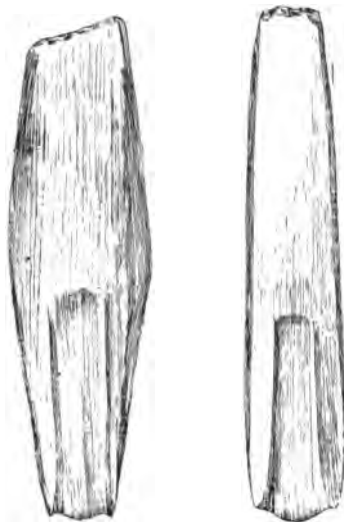


FIG. 17. To left, gouge from Hathaway's site. The narrow edge or bit and flaring center are characteristic of Red Paint People gouges. S. 1-2.
To right. Gouge from Hartford's cemetery. The convex cutting edge is referred to on page 107. S. 1-2.

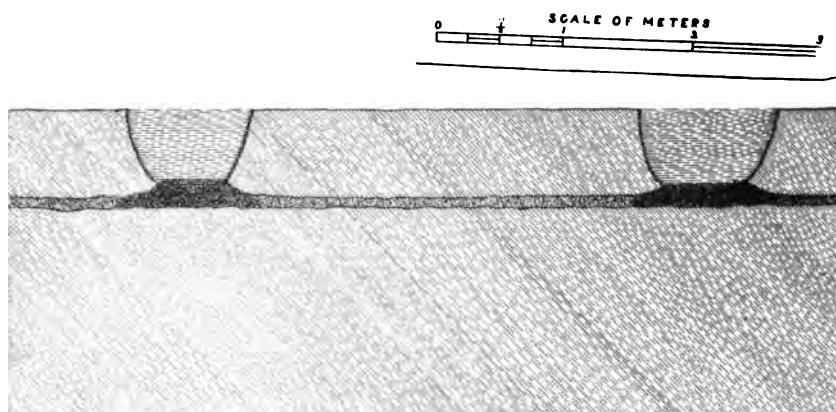


FIG. 18. Cross section of two graves in the gravel pit north of Hartford's.

was presented to Mr. Hathaway. Of the entire number of specimens found, five or six were given to him, and he promised to preserve them carefully.

The soil in which the burials were made was a mixture of sand and gravel. The red paint was found in greater quantities here than at the other sites, and it was much brighter. The entire space occupied by the graves was plainly discolored, about half a meter below the surface, by this great bed of ocher. Originally the amount placed in this cemetery must have been at least five or six bushels. We boxed and shipped to Andover upwards of a bushel of the bright pigment.

This cemetery differed from the others in having the graves practically all on one level. It is possible that one general pit was excavated and a heavy layer of the powdered hematite or ocher spread upon the floor and then the bodies laid side by side upon this layer, with the implements placed either at the head or the foot or upon the body in each case. To account for so many burials being made at one time, it is suggested that in northern Maine the frost penetrates the ground in winter to a depth of one or two meters, according to the severity of the season, and in a large camp there might be many deaths in a winter when it was impossible for the Indians to dig graves because of the frozen ground; hence the bodies would be kept until spring and then interred with due ceremony in a common grave.

The same lack of uniformity in the placing of the objects was noticed here as in the other cemeteries. Except in grave 143, where the eighteen objects were found lying in a mass and close together, we may assume that most of the implements were interred in their original handles or fastenings; but these eighteen specimens must have been buried as unmounted blades, for they could not have been placed so compactly had they been in handles. Why this was done, we do not know. The graves themselves are

not very near together, and if each grave represents one human burial, there was space enough without crowding the interments. In some cemeteries groups of graves are placed so close together that observers have questioned whether they were graves and suggested that they were rather deposits of offerings.

Most of the implements ranged from twenty to thirty centimeters in length. The gouges were not only finely made, but most of them were of considerable size. None were found as long as the two longest discovered in the Hartford cemetery, but the average exceeded those from other sites. The plummets were especially well made, no rough ones occurring in the deposit.

Beside several of the winged stones or bipennate problematical forms, there were buried along with the tools curious oval problematical forms such as are shown in fig. 35. Sometimes two or more were found in a grave. Including the broken ones we found, I should judge, fourteen or fifteen of them at Hathaway's site. They are all perforated and most of the holes show traces of wear, plainly indicating that thongs were passed through them. The largest of these objects shown in fig. 35 is forty-three centimeters in length, and others range from twenty to thirty-five centimeters. The weight varies from six or seven ounces to a pound and a half. They are too slender to have served as weapons, too delicate to be considered pestles or grinding stones; their edges are not sharp, and they would be of no use as cutting tools. They may be classed provisionally as pendants or ornaments, though their weight and size seem to preclude the possibility of actual use as such. Just what they are and what purpose they served must remain, for the present at least, one of our archaeological problems.

With the deposits were the usual fire stones, the small pebbles or "lucky stones," and frequently a larger smooth stone which may have been used for grinding paint, or for some other purpose. From the presence of these larger stones at both the Emerson and the Hathaway site, one might infer that the small pebbles which we frequently found were not paint grinders. As several of them are of bright red or bright yellow material, and as they do not appear different in general from the ordinary small pebbles found on the shores of the lake, it seems to me probable that they were selected because of their color.*

* See p. 26.

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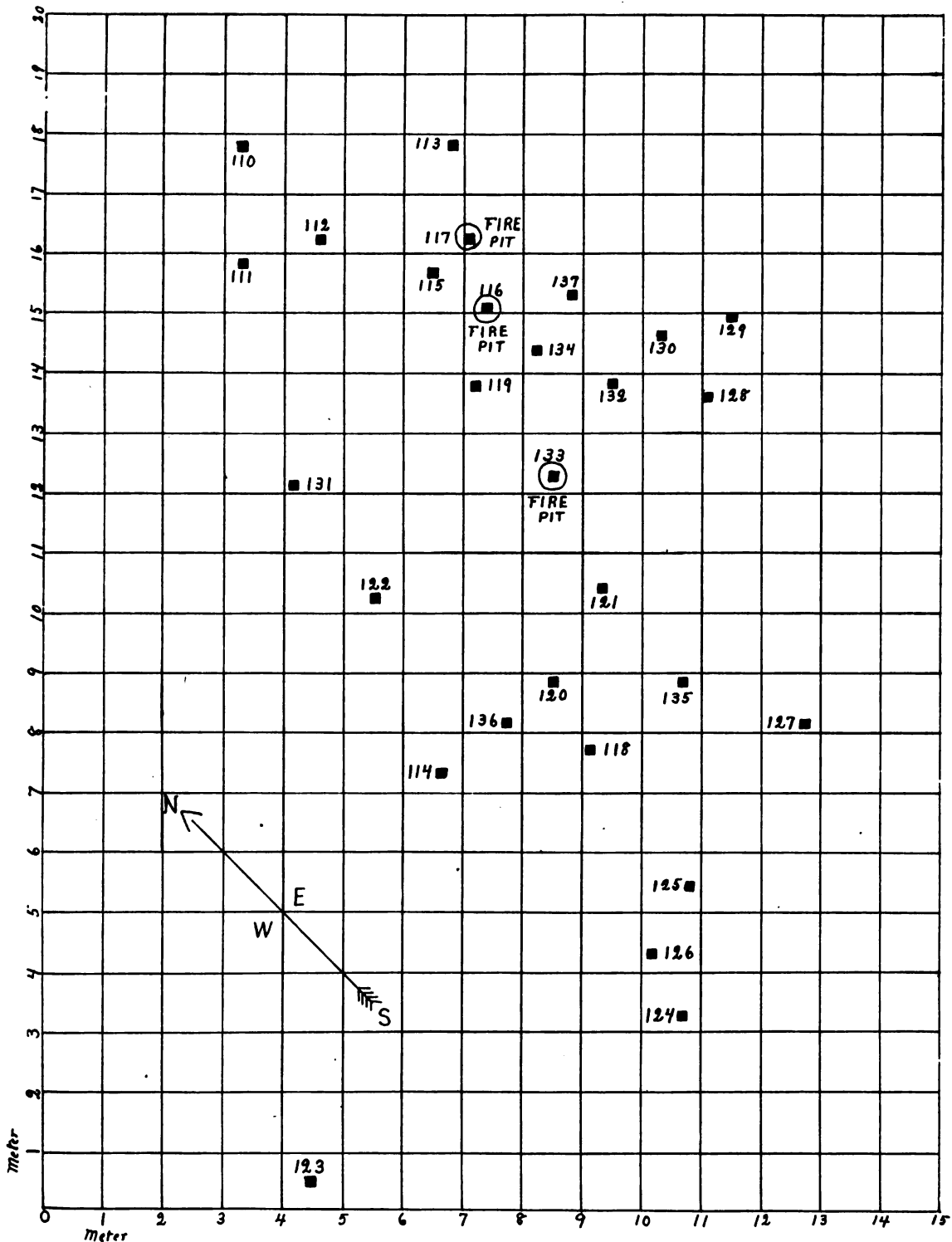
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PLAN V



MASON'S CEMETERY, LAKE ALAMOOSOOK, ME.
JULY AND AUG., 1912.

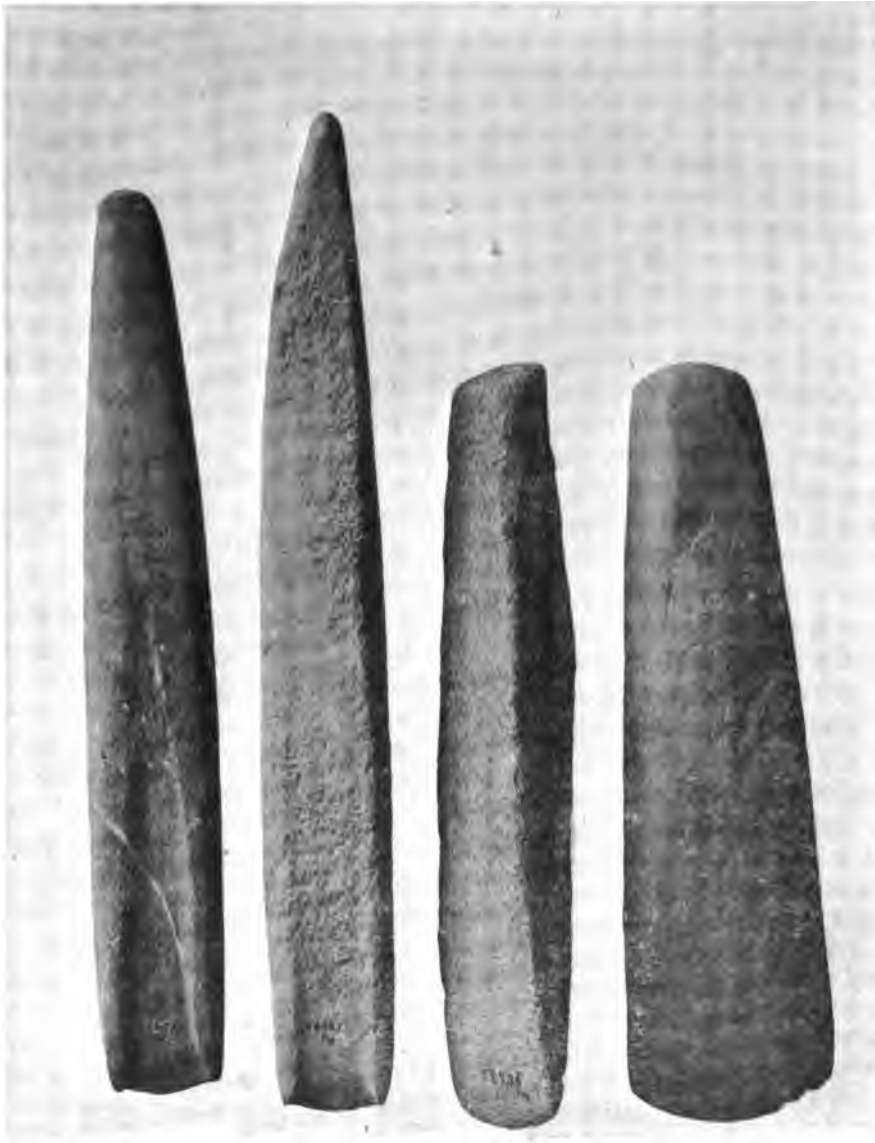


FIG. 19 Four gouges; 50677, gouge from Mason's; 50361, gouge from Hartford's; 52435, adze from Surrey, Maine (not Red Paint type); adze from Haskell's. S. 2-5.



FIG. 20. Center, long, specialized gouge from Mason's; above gouge from Emerson's; below, double ended gouge from Hartford's. S. 1-2.



FIG 21. Grave 64 of the Emerson site; perhaps a cache. See page 38.



FIG. 92. Grave 62. Emerson's. Several objects (celts, gouges, plummeta) lie under the edge of the rock.



FIG. 23. A burial beside a rock. Grave 61. Emerson's Cemetery.



FIG. 24. The long slate spear in position. Emerson's.



FIG. 25. Grave 90, Emerson's.



FIG. 26. Grave 101. Emerson's Cemetery.



FIG. 27. Types of problematical forms from Hartford and Mason sites. S. 3-4.

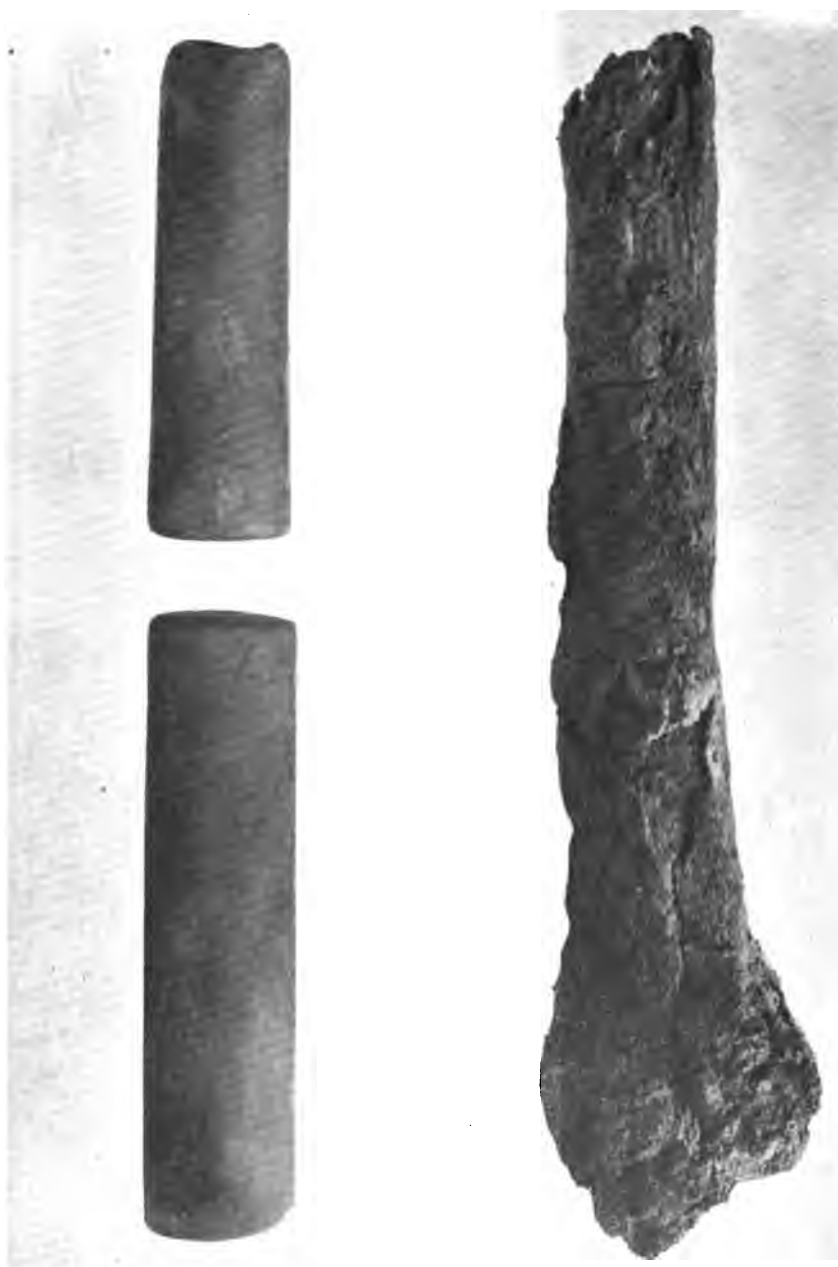


FIG. 28. The fragment of human femur and the two cylinders from graves 116 and 117 at Mason's. S. about 1-1.

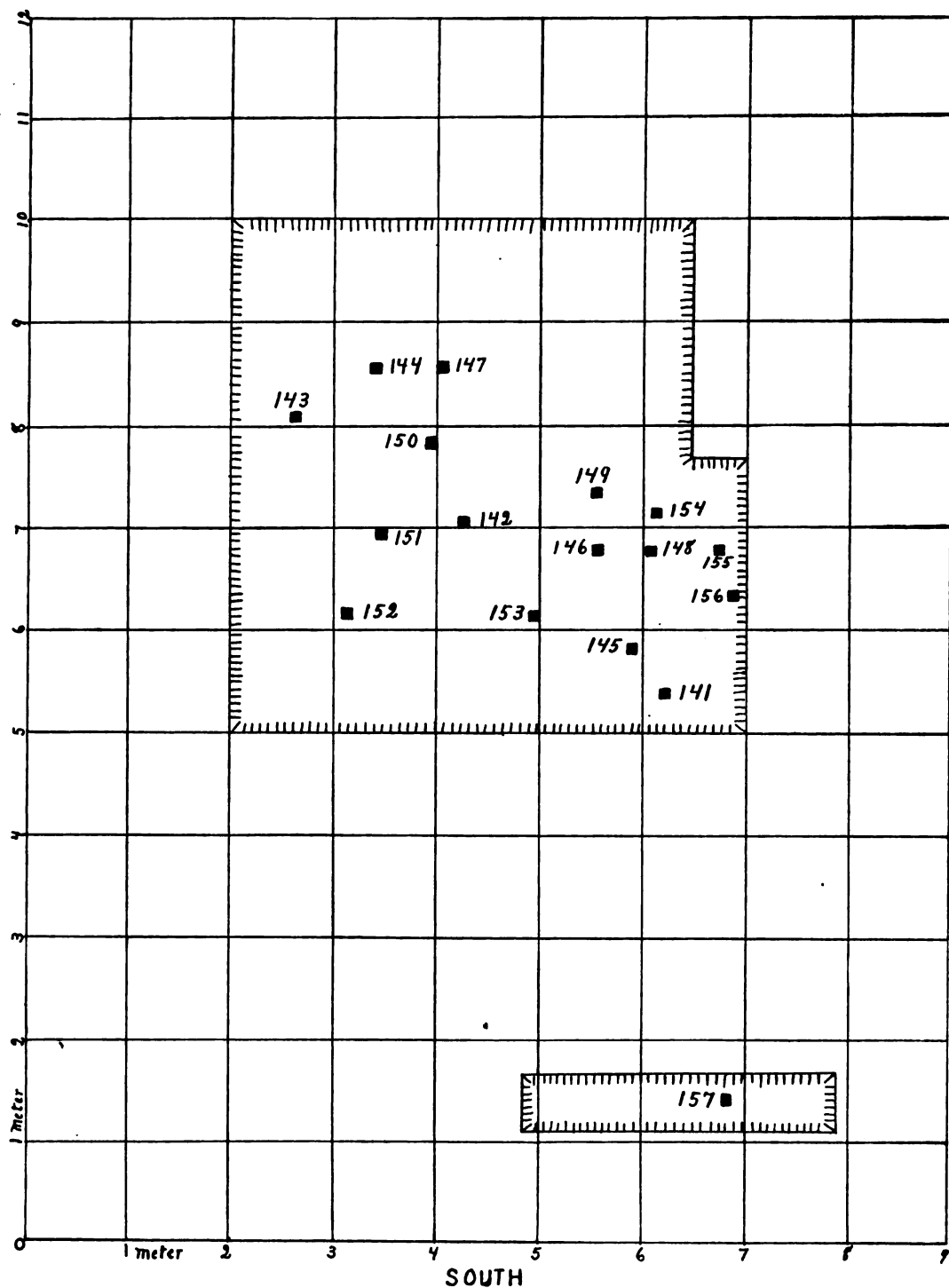


FIG. 29. The outcrop of powdered hematite and iron nodules, Katahdin Iron Works. A mass of soft hematite is in the depression in the foreground.



FIG. 80. The knoll on which Hathaway's cemetery was located.

PLAN VI



HATHAWAY - PASSADUMKEAG, ME., AUG 12-14, 1912.

There were no effigies in these graves, and not a trace of buckskin, of human bone, of copper, or of anything else was discovered other than the gouges, plummets, celts, and these stones and stone objects of the problematical class.

As in the case of the other cemeteries, Hathaway's was carefully staked off and numerous measurements were made in the course of our work. While it is well to record all this, and I have done so, yet the measurements themselves contribute little of value to our sum of knowledge. The essential thing is, that these burials were made in unknown times of high antiquity and by a peculiar people. Why such quantities of ocher were placed in every grave, passes understanding. It seems to me that to the mind of the aborigines this ocher was more than mere paint. If it were considered as paint and nothing else, far smaller quantities would have sufficed. Possibly we have, in the presence of these bushels of powdered hematite, evidence of some unknown ceremony or custom. Whether future explorations will enable us to determine the character of this ceremony, is extremely doubtful.

The field notes of one of the larger graves are as follows:

"Grave 143. Fig. 32. The objects in this grave were remarkably closely packed — all touching one another in fact, and parallel. A very large quantity of pyrites powder was left at east edge of group. Several of the objects were very badly-disintegrated and decayed by contact with the pyrites.

"Order, from top down: Club, 36 cm., lay east-and-west at north edge of group. Pendant, 30 cm., was just south, parallel, and with perforated end to east; perforated and corroded by pyrites. Large gouge, 22.4 cm., bit to west under perforated end of pendant; small end eaten by pyrites. Decayed triangular celt, 14.6 cm., near east limits, bit to west. Large celt, south of others, bit west; this was utterly crumbling. Slender gouge, 25.2 cm. under this, bit west, groove down. Another gouge, bit east and groove-side down; eaten. Gouge with squared edges next. Large pebble to west of group. Celt next, near west limits. Slate pendant under this, 24.6 cm. long, lying flat, with perforated end to east; this pendant had round and oblong nicks or dents on both surfaces, almost as if in imitation of fish scales. One utterly decayed stone object. Also one hammer stone and a smooth pebble. There was abundant ocher. The top of the mass of objects was about 38.6 cm. from the surface."

BLUE HILL—HASKELL'S CEMETERY. 1913

There were no more Red Paint People's cemeteries opened in 1912-13. On June 26, 1913, we went from Toddy Pond to see Mr. Coburn Haskell of Blue Hill, who was building a cottage on a narrow neck of land in



FIG. 31. Grave 142. The ocher is plainly visible. Hathaway's Cemetery.



FIG. 32. Grave 143. The Hathaway site.



FIG. 33. Grave 141. Note the heavy mass of ocher in the center. Hathaway's Cemetery.



FIG. 34. Grave partially uncovered. Hathaway's Cemetery.

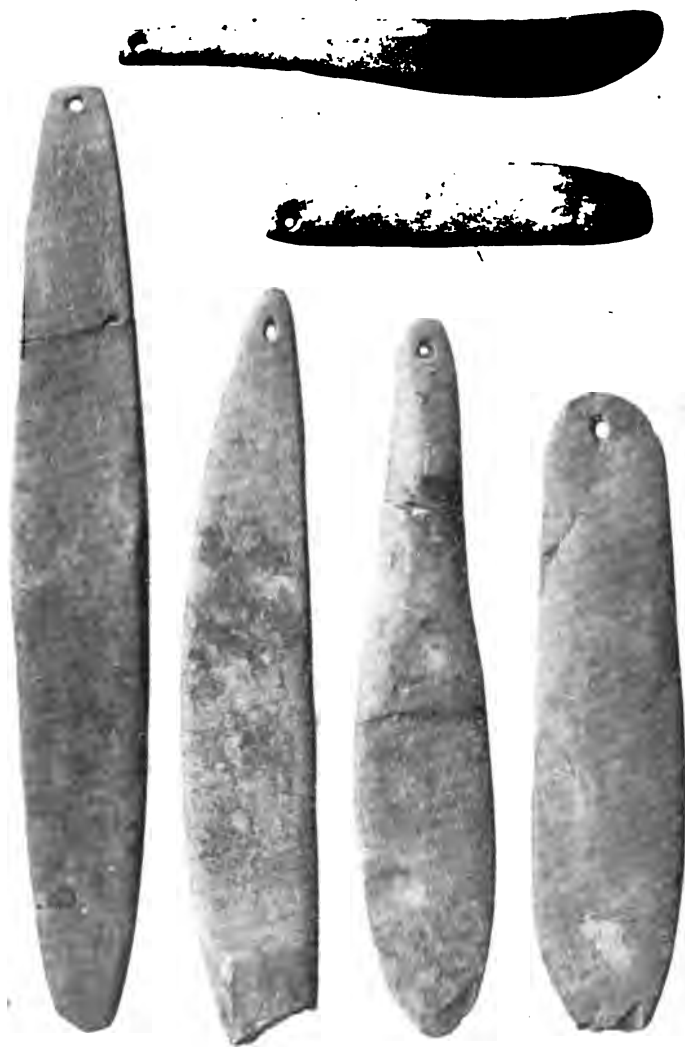


FIG. 35. The long, perforated objects from Hathaway's. S. about 2-7.



FIG. 36. A grave at the Hathaway site.

that town, known as Parker's Point. Graves had been discovered there during the digging for the foundation of the house, sometime early in May, and Mr. Sugden and Mr. Hutchings had been sent over there soon after the discovery and had received permission from Mr. Haskell's architect to carry on explorations. Mr. Sugden's party and ours took out some forty graves, but the conditions were such that no very satisfactory researches were possible, and in this brief report no map is presented, for the reason that the work was hurried and much interrupted. Indeed, after two days' exploration, Mr. Haskell requested me to cease work altogether.

The cemetery lay well toward the end of the point and was about eight meters above high tide. There was a large spring of fine water just under the bank near the graves. All the burials were in fine white sand with no gravels and no boulders. In this respect the cemetery seems unique. It is one of the most interesting of the nineteen Red Paint cemeteries discovered since Dr. Hamlin reported the first one in the early eighties, although with the exception of the cemetery at Hart's Falls, near Warren, Maine, no other has suffered greater destruction.

There were at least one hundred and fifty and possibly two hundred graves or interments on the estate, but all of them except the forty which we examined were dug up by the local people, or possibly employees of Mr. Haskell, who worked there during the evenings and Sundays until the place was thoroughly ransacked, and the objects found were taken to their homes in the vicinity. Mr. Haskell himself had two large boxes filled with various implements, including some of the delicate slate spears and daggers. It is impossible to determine the number of effigies and crescents, slate spears and other objects of high finish and unusual form, discovered by the workmen. Counting the objects we have and estimating those in the possession of Mr. Haskell and the workmen, it is safe to assume that the graves originally contained at least six hundred and possibly seven hundred artifacts.

As the work was in the interest of science and the Haskell cemetery was very important, I felt it my duty to secure from the workmen as many of the specimens as possible, in order that they might be preserved in the Phillips Academy Museum, although under different circumstances such a course would not have been followed. The workmen stated that they intended to sell these objects, and we therefore visited a number of the men and secured approximately seventy or eighty specimens. Mr. Walter B. Smith of Bangor also took an interest in saving as many as possible of the objects secured by Mr. Haskell's workmen, and some fine specimens in his collection are from this site.

Comparison of the objects from the Haskell cemetery with those found in other Red Paint cemeteries shows that the artifacts from this site are considerably above those from other places in excellence of workmanship

and in fine finish. A possible exception is Hathaway's cemetery at Passadumkeag, but there we found none of the slender slate spears and no effigies.

In one particular the Red Paint People as a whole surpassed all other tribes, ancient or modern, living north of Mexico. From a study of all the material from their graves in the several museums, it would seem that this people excelled in the manufacture of stone gouges. While some of the gouges are rough or crude, others present a symmetry of outline that is exceedingly graceful, and many have edges ground as sharp as stone can be worked.

In this art the natives were very expert, but their artistic sense was not developed and their stone effigies are very crude. Among those found at Haskell's was an effigy of a bear (fig. 37) and several small objects one of which may represent a duck (fig. 39), and another a quadruped. The plummet was also sometimes ornamented or fashioned as effigies.

In fig. 39 there is a whale plummet found at Hartford's; next is a porpoise effigy plummet at the top from Emerson's; below the duck effigy referred to, from Haskell's, and next a remarkable little porpoise effigy of red sandstone from Hart's Falls cemetery, St. Georges river. In the lower corner, to the left, is an effigy (probably a bear) from Haskell's, and a flat perforated stone in the right hand corner from Haskell's. If the plate is turned to the right, the object appears not unlike the head of a codfish.

The Red Paint People seem to have prized slate spears highly. Many of them have been found, not only at Haskell's but in other cemeteries. It is rare to find broken gouges or adze blades in the ocher deposits; hence the presence of broken slate spears and sometimes of fragments of these objects not more than six or seven centimeters in length indicates that even the broken ones were valued. See fig. 38. A grave containing eight of the slate points was fortunately discovered by Mr. Sugden and not by the workmen, for otherwise these fine objects would have been scattered and many of them doubtless lost. See fig. 40.

Attention is called to the very fine wide-bladed adze of green slate and also to one or two of the other adze blades shown in figs. 41 and 42.

The paint at Haskell's was not so bright as at Emerson's and the other cemeteries. This was probably due to the fact that the burials were in fine sand, and as it was easy for water to penetrate to the deposits, the paint became dissolved and disappeared.

It is most unfortunate that the Haskell cemetery was not found before the building of the residence on Parker's Point, as in that case it would have been possible to record all of the deposits properly. I insert herewith the field notes on two of the few graves concerning which complete notes could be taken.

"Grave 167. Forty-five cm. down. Considerable quantity of faint ocher. Contained the remains of five long slate spear heads,

only one of which could be reconstructed entire. The broken surfaces of the others all appear ancient. The largest head when whole had a length of about 25 cm. They are all of the usual type—flatly hexagonal in cross section near the stem, diamond shaped nearer the point. The spear-heads lay in a compact cluster, parallel, with butts down and points up at a steep angle, pointing due north. At some distance occurred two very rude small plummets and an oblong pebble. See fig. 38.

“Grave 169. Forty-five cm. from surface. A celt, 18 cm. long, with badly pitted surface and showing contact with pyrites near base, lay in the center of the group of objects. It lay nearly flat, bit due north. Apparently unfinished plummet, 11.5 cm. long, lay due east, larger end even with butt of celt. Rude chipped point, 10 cm., lay 2.5 cm. southeast of celt butt, pointing northwest. Gouge, 17 cm. long, in contact with pyrites, lay 20° east of north from celt, partly on edge, groove facing northeast. Plummet, 7 cm. long, partly under finely chipped point of red flint, 10.7 cm. long, partly on edge, with point southwest and under the celt, 2.5 cm. in from the butt. Remains of gouge, now 11.6 cm. long, of unusual shape, with bit end entirely eaten away, lay under celt, 15° east of south, groove down and bit end southeast. Remains of pyrites just off bit of this second gouge. Just beyond this lay a plummet, nearly spherical and badly corroded. An “iron stone” lay just east, in contact. Two plummets, one 7.3 cm. long, lay 14 cm. off bit of celt and directly in line, knob 5° west of north.”

SULLIVAN FALLS CEMETERY. 1913

After our survey of Toddy Pond and the excavation of Haskell's cemetery on Parker's Point, Blue Hill, we moved on July 3, 1913, to Hancock Point, on Frenchman's Bay, opposite Bar Harbor, and took up quarters in a cottage near one or two shell heaps.

On July 5, the whole force went to Sullivan Falls, distant about two kilometers from the cottage, to examine a cemetery there. It lay at the southeast end of a long gravel knoll, or ridge, apparently of glacial origin, which slopes up gently from an arm of the sea until it reaches a height of twenty or twenty-five meters.

About thirty years ago the Maine Central Railroad built a spur railroad to the steamboat landing here, and during the deepening of a cut in order to lay the tracks graves were discovered and most of them were destroyed at that time. Mr. Milton Stratton, an architect of Bar Harbor, was present during the excavation by the railroad authorities, and he informed me that a great many fine objects were then taken out and carried away by workmen and others. He mentioned one in particular, a double gouge or



FIG. 37. The bear effigy from Haskell's site. Size 1-2.



FIG. 38. Grave 167. Group of broken slate spears. Haskell's Cemetery.



FIG. 39. Group of effigies from various cemeteries. S. 1-1.

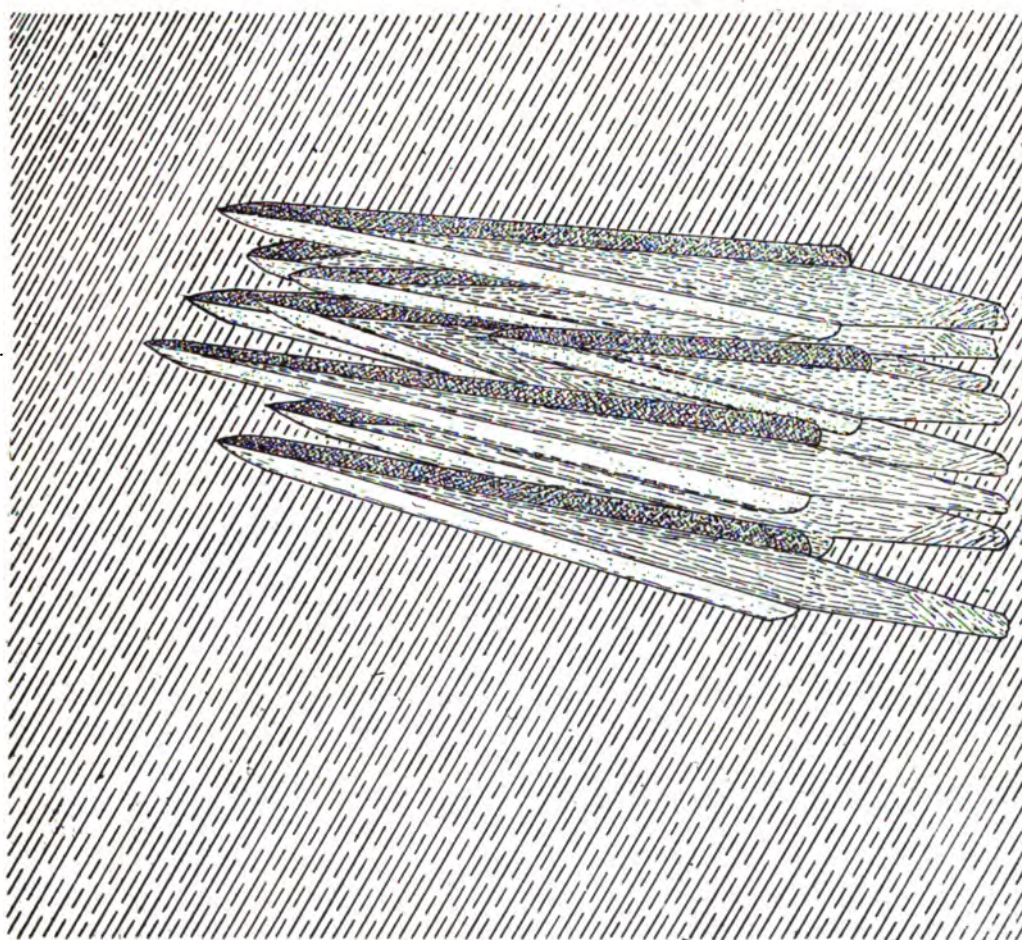


FIG. 40. Drawing of the position of the eight long spears found in Grave 163, Haskell's Cemetery.
S. about 3-8.



FIG. 41. Left, 50807, fine gouge from Hathaway's. Middle, face and back of the gouge-adze object 50625 from Emerson's. Found in grave 100. Right, back of large green stone blade from Haskell's. The face of this is shown in the second object from the left in Fig. 42. Size about 1-4.



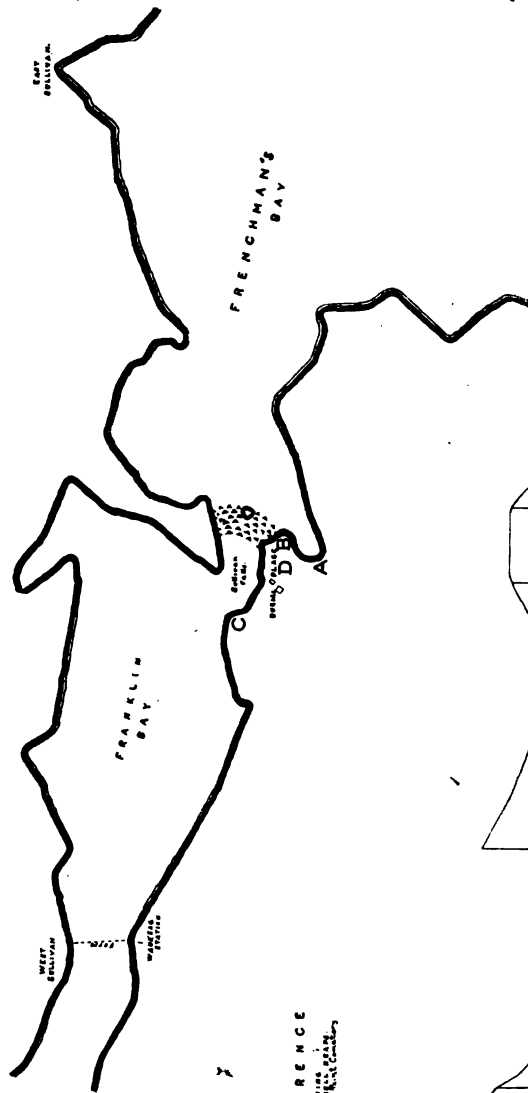
FIG. 42. Group of objects from the Haskell and Emerson Cemeteries illustrating the difference of stone objects. Left to right: gouge, long hatchet blade, adze blade, adze blade, gouge, adze (profile), slate spear, hoe or digging tool. S. about 1-6.



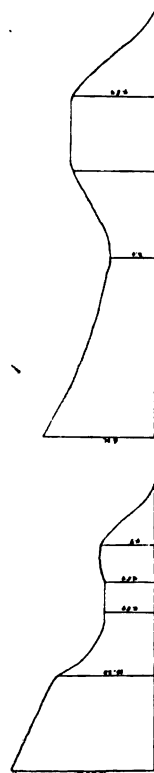
FIG. 43. The large ash pit at Sullivan Falls.

PLAN VII
 MAP OF SULLIVAN FALLS
 HANCOCK COUNTY MAINE
 DRAWN BY E.O. SUGDEN, 1913.

SCALE - 1 CENTIMETER = 50 METERS.



REFERENCE
 A. MAINE
 B. SULLIVAN FALLS
 C. SULLIVAN FALLS
 D. SULLIVAN FALLS



CROSS SECTIONS
 SHOWING SILL AND CHANNEL

long implement, which he thought must have been at least fifty centimeters in length. Near the blacksmith's shop there was a large tub, and the stone tools taken from the graves were thrown into this. He said that once or twice he noticed the receptacle half full of fine gouges, adze blades, spear heads, etc. A few of these objects were recovered and are in the Peabody Museum at Harvard, but most of them are lost forever. In this respect the site resembles that at Parker's Point, and our observations could not be complete for similar reasons.

We staked off the ground and opened about twenty graves, the material from which proved to be somewhat inferior in character to the artifacts found in other Red Paint People cemeteries. Much of the sand and gravel from the original excavation had been thrown over the edge of the bank at Sullivan Falls, and the workmen had also made a large "fill" in order to widen the road over a narrow neck of land. Some of this earth remains there at the present time. Five men were put to work with shovels on the talus at these two places, and they dug out four or five adze blades and gouges and one or two plummets beside considerable red paint.

Mr. Stratton was of the opinion that the graves were originally in two long parallel rows, and the twenty or more which we opened were so placed that we concluded his statement to be correct. Between the rows we found there was a space five meters in width in which no graves occurred, and to the north of our large trench we found no graves for a distance of twenty-two meters. There were patches of ocher here and there probably indicating that graves had been opened by persons in search of specimens, and a number of ash pits were discovered which Mr. Manning noted on his field map.

We worked for a number of days at Sullivan Falls extending the trenches and pits, but could find no more burials or deposits. No graves were found in the ash pits except in one instance. Of this the notes state: "Grave 195 was 48 cm. down, immediately west of the central part of the fire pit. Pyrites and an 11 cm. hatchet blade and a 13 cm. adze blade were found. No ocher noted. The black layer at the base of the fire pit was 10 cm. below the grave, showing that the fire pit was made earlier." We worked out the deposits of ashes carefully, but no flint chips or signs of artifacts of any kind were to be observed. The purpose of the pits must therefore remain unknown. They were large enough to have served for the storage of corn or other food, but we have never in any other place found such caches filled with ashes.

We also excavated the shell heaps at Sullivan Falls carefully, thinking to obtain information upon a possible connection between the occupants of the shell heap villages and those who buried in the cemetery nearby; but the heaps did not differ from others. They are described on p. 156.

Plan VII shows the situation of the shell heaps and the cemetery, but we

present no detailed plan of the latter because it had been so much disturbed that few deposits of objects remained.

The following extract from the field notes gives details of two graves:

"Grave 181. 30 cm. down. The first objects encountered, a celt in two pieces several cm. apart and a smooth pebble, were separated by a space of about 30 cm. from a second group of objects, closely packed and at the same level, consisting of a crescent and two other pebbles. The crescent, with a large central perforation, lay on end. At the same level but 35 cm. south occurred five plummet. Two large and unusually well wrought ones lay with axes in a straight line north and south, the northern one with its knobs north, the southern one, knob south. At right angles and 5 cm. east of southern one lay a third large plummet, with knob west. These three all lay flat. In the angle of these lay a small flat plummet rudely chipped from red jasper, perforated instead of knobbed. It was nearly on end, perforation up. Due north was the fifth plummet, of ordinary type but smaller than the first three. It was on end, knob up. Another small plummet found in this grave near the crescent group was remarkable for having a double groove around the knob."

"Grave 183. 35 cm. down. The objects were closely grouped. A gouge 17 cm. long with about 1-4 or 1-3 of its length broken sharply off, lay groove up, north west by south east, bit north west and higher than butt. Nearly parallel was a smaller gouge-adze 14 cm. long, distant 10 cm. to the south west, bit in opposite direction from first gouge. A deeply notched slate point 9.5 cm. long, point north west and flush with ends of gouges, lay between these two. A grooved pebble, groove down, lay a few cm. southwest. Much staining of soil by pyrites, northeast by east of cluster, distant 15 cm. A very remarkable plummet with a perforation at either end and with four rough faces having longitudinal rows of small, irregular depressions, lay flat, 25 cm. north of group. A small gouge apparently fragmentary, and a small perforated pebble lay with first group. Under these objects occurred a gouge 17 cm. long, with an unusually broad and very finely wrought cutting edge, somewhat worn. It was much caked with pyrites, the iron having cemented it with the earth and pebbles. There also occurred under these objects two very large masses of badly disintegrated pyrites, one nearly spherical and measuring 11 cm. in greatest diameter. The sand and stones around and under these lumps were colored yellow and cemented into a compact mass in a radius of 15 to 20 cm. There were also some hammer stones and pebbles."

The details of the two ash pits are also presented herewith. Fig. 43 shows the larger one.* That they were contemporary with the Red Paint graves is probable, but we could not find a close connection as did Willoughby at Ellsworth.

“Large fire pit (this is shown in fig. 43). The heavy white layer (of ashes) in this pit was 2.25 meters across on its longest axis north west by south east. Below this white layer were two strata of black earth, 5-8 cm. thick and at a distance from each other varying from 10 to 30 cm. The upper layer of black earth averaged 1.75 meters below surface. The gravel was very much caked all about and under the white layer. The two black strata were deepest down near the center of this pit, but were on the whole irregular.”

“The fire pit just north of grave 187 presents the usual features. The caked gravel at its deepest extended 1 meter below the surface. A section across the workings, parallel to base line, north west and south east, 10 m. long and 1 m. deep, shows these features. From the south east end fine gravel for 1.5 m.; coarse gravel, commencing at bottom of trench and reaching surface, 2.5 m.; very small ash pit 1.5 m. from south east end; at 5.5 m., in coarse gravel, ash pit 60 cm. across, 30 cm. down; at 7 m. a still smaller ash pit; from here the coarse or intermediate gravel extends to north west end of trench. The gradation and bedding of the gravel seem all to be of natural origin.”

GEORGES RIVER.

HART'S FALLS CEMETERY

While we were at Castine in 1915, Mr. Sugden and Mr. Taylor visited the Georges River, or St. George's River, between Rockland and Warren in Knox County, and reported that there were several collections in that region which contained implements of the Red Paint People types. Accordingly on the 8th of August I went over there with some of the men and we found, on a high ridge overlooking Hart's Falls on the Georges River, a disturbed cemetery. We put down thirty or forty pits here but found nothing except a few plummets and a gouge. The graves appeared to be one to two thirds of a meter deep, but it was impossible to make proper observations, as the place had been thoroughly ransacked. The formation is peculiar, as the hill is covered with large boulders from one to two meters in diameter.

* Dr. Peabody's cane shown in the photograph, is 92 cm. long.

TARR CEMETERY

Dr. John Alden, a direct descendant of the famous John Alden, and a dentist in the town of Union, was familiar with the region and had made a large collection from Red Paint graves in previous years. He accompanied us for a few days on a tour of the Georges valley and took us to several sites. We examined knolls along the river as far up as the town of Union. Not far from Union, on the Tarr estate, in a hillside about two hundred meters from the river, we found another disturbed cemetery of the Red Paint People and opened some twenty graves. This place had been much ransacked by Dr. Alden and other collectors and we did not make a map of it. The soil was sandy loam but rather free from stones. The graves were shallow, usually about one third of a meter in depth. Fifty or sixty objects were secured, which will be used later for exchange purposes. Eight or ten graves were found complete and undisturbed and their contents were carefully recorded and preserved. They do not differ practically from other Red Paint People types and it is not necessary to describe them here.

STEVENS CEMETERY

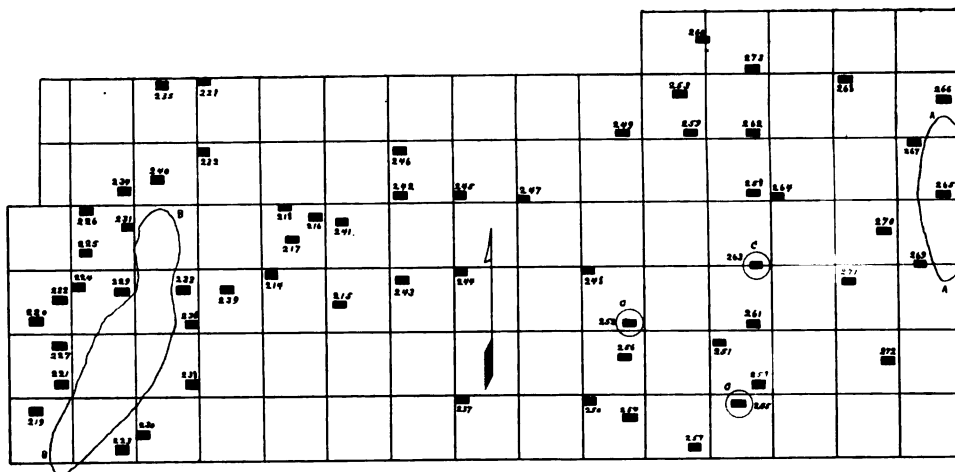
Following a suggestion of Dr. Alden we examined a high knoll overlooking the Georges River halfway between the town of Union and Warren in August, 1915, and found an undisturbed cemetery there, on the land of Mr. George Stevens. This was a most welcome discovery, as all the other cemeteries found by us except Hathaway's at Passadumkeag had been more or less disturbed.

The hill or ridge on which this cemetery was situated lies along the right bank of the river for about two hundred and fifty meters east and west, and has a crest or higher portion about one hundred and thirty meters long, which slopes off to low, swampy ground on the west.

As our season was near an end, I employed local labor on this work in addition to the regular force in order to expedite matters, and we thus had a total of fourteen men at work up to August 22. When we obtained permission from the owner to dig, the men were assigned places ten or fifteen meters apart on the crest of the ridge, and by means of their test pits, graves 214 to 217 were immediately discovered on the western slope.* As soon as graves had been found, the men were moved to this part of the hill and started a trench. The trench was ten meters wide at the western end and extended twenty-six meters toward the east, increasing to seventeen meters in width.

The workmen dug out practically the whole ground in eleven working days, and the total amount of excavation was equal to a trench thirty-six

* References to plan VIII will show that graves a little west of the center have lower numbers than others. This is because the test pits were sunk before we knew the exact position of the cemetery.

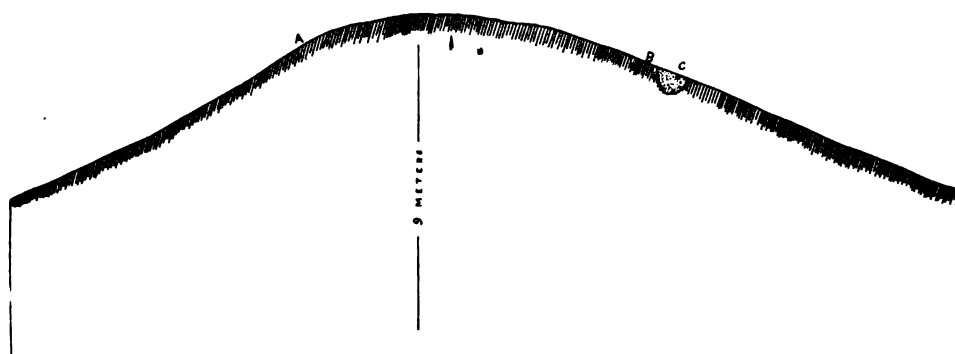


STEVENS CEMETERY, WARREN, MAINE.

A.A. INDICATES THAT WITHIN THIS AREA THE RED PAINT SEEMED TO HAVE BEEN SPREAD EVENLY.
 B.B. INDICATES THE LAYER OF HARD SAND.
 C.C. THE FIRE PITS.
 THE SQUARES INDICATE METERS.

DRAWN BY E.O. SUGDEN.
 1920.

PLAN VIII



ELEVATION OF STEVENS CEMETERY

A.B. EXTENT OF CEMETERY.
 C. FIRE PIT.



FIG. 44. Grave 214, Stevens' cemetery. This was surrounded by large boulders.

meters in length and twenty meters wide. All our pits extended down to undisturbed ground or hard pan. Some of the graves were found as far down as a meter or a meter and a half below the surface. We do not think that the cemetery extended more than forty meters in any direction, but there may be a few graves remaining on the slopes where the owner did not wish us to dig.

In this cemetery, unlike other Red Paint cemeteries, the burials were not made in sand and gravel with occasionally a boulder or stone near, but they were made for the most part in heavy, coarse gravel and frequently had great boulders twenty to forty centimeters in diameter lying upon them. The hill is distinctly of glacial formation, being more nearly like Mr. Willoughby's mound at Lake Alamoosook than any other burial site that we have discovered.* It contains here and there spots two or three meters in diameter where the sand is finer and the gravel small. (On the field map, plan VIII, Mr. Sugden has indicated one place where there was very hard sand extending for over five meters along the west side of our trench.) There was also a long layer of fine sand, which although it offered a simpler problem of excavation, few graves were found in it and the Indians seem for some reason to have preferred the deposit of gravel and boulders for digging their graves. Numbers of the graves extended under the boulders. Either the objects were placed under and around the large stones as they occurred, or the stones were placed on top of the graves after the bodies had been laid in the ground. This is especially evident in grave 224, dug out by Mr. Taylor, which contained twelve large boulders, twenty or thirty centimeters in diameter. They appeared to be arranged in a rude circle. On the left (northwest) there were four on top of one another, on the right three more, and in the center five directly on the buried objects.

As the site was undisturbed and everything presumably in its original position, we did much of the excavating with the hand trowels, which enabled us to work very carefully and to make observations in detail.† Many strays, or objects either lost or purposely thrown in after the graves were partly filled, were picked up. Two small, beautifully wrought crescents found by Mr. Hutchings, which lay about fifteen centimeters below the sod-roots, were numbered as coming from grave 236, but they may have been strays, or their being found together may indicate the presence of another grave nearer the surface, although there was no red ocher. We have elsewhere, especially at the Emerson cemetery, referred to the presence of a few stray objects here and there as indicating disturbed graves, but since they

* Plan IX shows elevation of the ridge.

† We took the usual photographs, but found when the films were developed at Andover that something had been wrong with the camera and they were unsuccessful. Fortunately my son had made numerous drawings, and these we have. Usually we make drawings as well as photographs, for the sake of protecting the records in case the camera fails.

were found also in the Stevens cemetery, which had not been explored and where there had been no heavy plowing, it seems possible that these so-called strays were placed on the site intentionally.

Near the grass roots but not in the graves and never more than nine centimeters from the surface, were found numerous chips of chert, quartz, and felsite, but in the graves themselves there were no objects chipped from quartz. In fact, with one or two possible exceptions, we have never observed projectile points or knives made of quartz. One fragment of pottery about two centimeters in diameter, was found eight centimeters below the surface, in the sand.

The men examined the ground about the deposits very carefully, in order to ascertain the outlines of the original excavations, but it was impossible to determine their measurements, except in the case of one or two in fine sand.*

About one hundred and twenty meters south from the cemetery, in Mr. Stevens' orchard, there was a small circular ridge similar to a circus ring. The earth in this circle did not appear to be different from the surrounding soil, but Mr. Stevens said that when he was a boy his father told him that in his own younger days the ridge was more prominent, the ground inside was hard and packed, and the place was called "the Indian dance ground." We estimated this tradition to date back about eighty years. Mr. Hutchings dug a large pit in the center of the so-called dance ground, but as he found only broken bricks, ashes, and pieces of crockery, we concluded that it was the site of an old dwelling. This incident is mentioned here as an illustration of the many traditions concerning Indian occupation of the land. A survey like ours has to spend much time in following them up but most of them when investigated do not yield results of any value.

Five fire pits were found scattered about the crest of the hill, some of them outside the area of the cemetery but others lying above very deep graves. This was the case at graves 252, 255 and 263, in the eastern half of the ground. Excavations in all of them revealed only black earth, charcoal, etc. It was not difficult to trace the size of the pits, containing as they did masses or layers of charcoal. They varied from one and three quarters to two and one quarter meters in diameter. We concluded that where they occurred, an unusually deep pit was first dug; in the bottom were placed the ocher, the stone objects, and probably the body of the deceased; sand or gravel, earth or stones, making a protecting layer, were next placed; then the remainder of the pit was filled up with charcoal and ashes, whether the actual burning took place in the pit or not. If the ash or fire pit had been in existence first, and the natives dug through it to bury the ocher and ob-

* The position given for a grave on plan VIII is that of the deposit of stone objects. The ocher often extended some distance from this spot, in one direction or another.

jects beneath, as some have thought, we should expect to find some charcoal mingled with the red paint, but this is seldom or never the case.

As this was an important cemetery, owing to its undisturbed condition, we include here descriptions of several of the graves, taken chiefly from the field notes. In general we did not find many plummets in this cemetery, and the small rubbing stones and the so-called "lucky stones" were not in every grave.

"Grave 231. This lay about 82 cm. deep in some brown ocher. It contained a small stone and three spears in a space about 20 cm. by 25 cm. The spears lay flat, the longest one pointing north, the other two east and north east. Between graves 230 and 231 was an elevation or ridge of hard, compact sand, commonly known as "hard pan." The two graves had been dug down at either end of this hard pan, apparently penetrating a part of it, and a considerable quantity of heavy gravel and boulders must have been removed in making them; but their position suggests that the very hard sand made an obstacle that the Indian did not attempt to dig into. We could not trace the exact dimensions of these graves, although we spent considerable time in an effort to do so."

"Grave 255. This grave lay near or under the edge of a fire pit and was the deepest of any that we found, being down about 1.80 m. It contained much red paint, a quantity of which was saved; a long gouge, grooved, blade north; a spear head pointed south, and a rubbing stone; a plummet with the head south; a long gouge on the side, pointing south west; another rubbing stone and a gouge blade west: all of these objects were in a space 45 cm. by 50 cm. Outlines of the fire pit could be observed.

"Grave 270. Eighty cm. below the surface we came upon a large deposit of ocher extending over a space 80 cm. by 90 cm., and nearly 5 cm. thick. It was not so bright as ocher found in other cemeteries but we saved a box of it. There was a gouge, hollow side up, blade north; a plummet, head north; three rubbing stones placed in a triangle ten centimeters apart; and some pyrites. In taking out the ocher at the western edge of the grave another gouge was found, hollow uppermost, blade north.

"Grave 232. This was under a very large boulder about 40 cm. long by 30 cm. wide and estimated to weigh 200 pounds or more. It required the services of two men to lift it out of our excavation. It was waterworn, oval, and had a slightly jagged end which protruded from the ground about 5 cm. Two other good-sized boulders were placed on the edge of the grave to the north. Under the large rock and about 42 cm. below the surface of the ground were seven objects in a space about 30 cm. by 20 cm. They

all lay with their heads up and cutting edges down except the gouge farthest north. There was some red paint but it was not bright.

"Grave 263. This was another very deep grave, being under a fire pit and at the same depth, 1.80 m., as the other two similarly placed. We noticed a slight depression in the surface of the ground above this grave, which is unusual in our experiences. One meter from the surface was a heavy layer of charcoal about 9 cm. in thickness and 32 cm. below the top of the layer was the red paint. There were three gouges, two hammer stones and a rubbing stone."

"Grave 224. This is the grave surrounded by twelve stones or rocks of various sizes, as described on p. 90. The level on which the lowest rocks rested was 82 cm. below the surface of the ground, but the rocks that were piled up on either side reached 60 cm. or 65 cm. above this level. The width measured across the top was 60 cm. The grave contained a gouge and a hatchet blade, both pointed northeast and lying flat side up, and upon removing the lower rocks we found another fine gouge with the top or poll up and the cutting edge or bit turned down; also a natural curved stone, an adze blade pointed west and a thin hatchet blade, flat side up, edge to the west."

OLDTOWN — GODFREY'S CEMETERY. 1918.

Mr. Fred Godfrey of Oldtown owns a plot of land lying along a slope on the west bank of the Penobscot, distant about two hundred meters from the water's edge and overlooking Oldtown Island, or Indian Island. Many years ago while engaged in planting trees, Mr. Godfrey found one or two Red Paint People graves, and being an amateur collector of Indian specimens he carefully preserved their contents. In subsequent years he found from two to four graves every season, until he had accumulated two hundred and ten objects, all of which are of the well-known Red Paint People types.

Several of us visited Mr. Godfrey's place in August, 1918, and assisted him in excavating five or six remaining graves. Including these, he estimates that he has opened some forty or forty-five graves. Their depth was similar to those found in other cemeteries, thirty to sixty centimeters. Most of the graves seem to be surrounded by ten, twelve or even fifteen large boulders which weigh from forty to one hundred pounds each. Several flat slabs occurring with these were thought by Mr. Godfrey to be placed intentionally, one at the head and one at the feet of the body. In two of the graves which I observed and assisted in opening these flat slabs were present, but it did not seem to me that they represented stones placed at the head and feet, although they were certainly somewhat different from the ordinary boulders placed in an irregular circle around the deposit.

No traces of bones were found, although we searched diligently with hand trowels. The objects found were of the same type as in other Red Paint cemeteries except that there were fewer of the long slender slate spears or daggers. There were a few plummets but not many chipped implements. The adze blades were large and fine and there was a considerable number both of the long, perforated and of the bipennate or double-winged problematical forms. Mr. Godfrey had found more of the oblong rubbing stones, or tool sharpeners as he called them, than occur in other cemeteries. There were a few pieces of iron pyrites. The red paint was not so brilliant as has been found elsewhere.

Beyond question there is also a Red Paint People cemetery on Indian Island, belonging to the Penobscot Indians, for numbers of the persistent types have been found by the Indians when they made excavations for fences or buildings, but they control the whole island and will permit no excavations by outsiders; so I was informed by the leading Indians when I requested authority to examine this island. The Indians took an interest in our work, and several of the older ones visited Godfrey's while we were there.

I include here observations on two of the graves on Mr. Godfrey's farm that were first opened by our party.

"Grave 279. This lies on top of the subsoil just below the surface of the present wagon road. Apparently many graves were destroyed when the road was built or filled in to a depth of 20 cm., but this one lay a little deeper. The red paint, which was a little faint in color, was about 2 cm. thick and extended something over a meter in each direction. On top of it in the center was a very large scraper or small hoe, about 11 cm. in length. There were also four roughly chipped knives of chert, one large flake knife with serrated edge, and a tube slightly flattened on one side, worked out from a narrow piece of banded slate, one half being dark and the other light. Heavy boulders lay scattered about.

"Grave 276. This lay east and west, extending for almost 2 meters. There were eleven rocks or waterworn boulders surrounding the objects or placed in two irregular rows beside them, with their tops 35 cm. or 40 cm. below the surface. The space between the two rows of boulders was about 47 cm. at the east end and 60 cm. at the west end. There was considerable red paint. Near the west end was a gouge about 12 cm. long, placed in a sloping position. There was a broken ornament on edge; also in a sloping position a long gouge lying in the red paint with blade west; and a curved adze blade, point west. Below this grave and extending down to a depth of about 80 cm. were five or six large rocks, colored red by the ocher. These were sloping and from 20 cm. to 30

cm. apart, occupying a square space 1.5 meters in diameter. Between these in the red paint was a white quartz arrow point 5 cm. or 6 cm. in length, a large adze blade and a gouge. The rocks and ocher beneath grave 276 may indicate a separate deposit, and there seem to be enough objects in the two deposits to constitute two graves, but the position was such that it was impossible for me to determine whether we should consider that there were two graves or one."

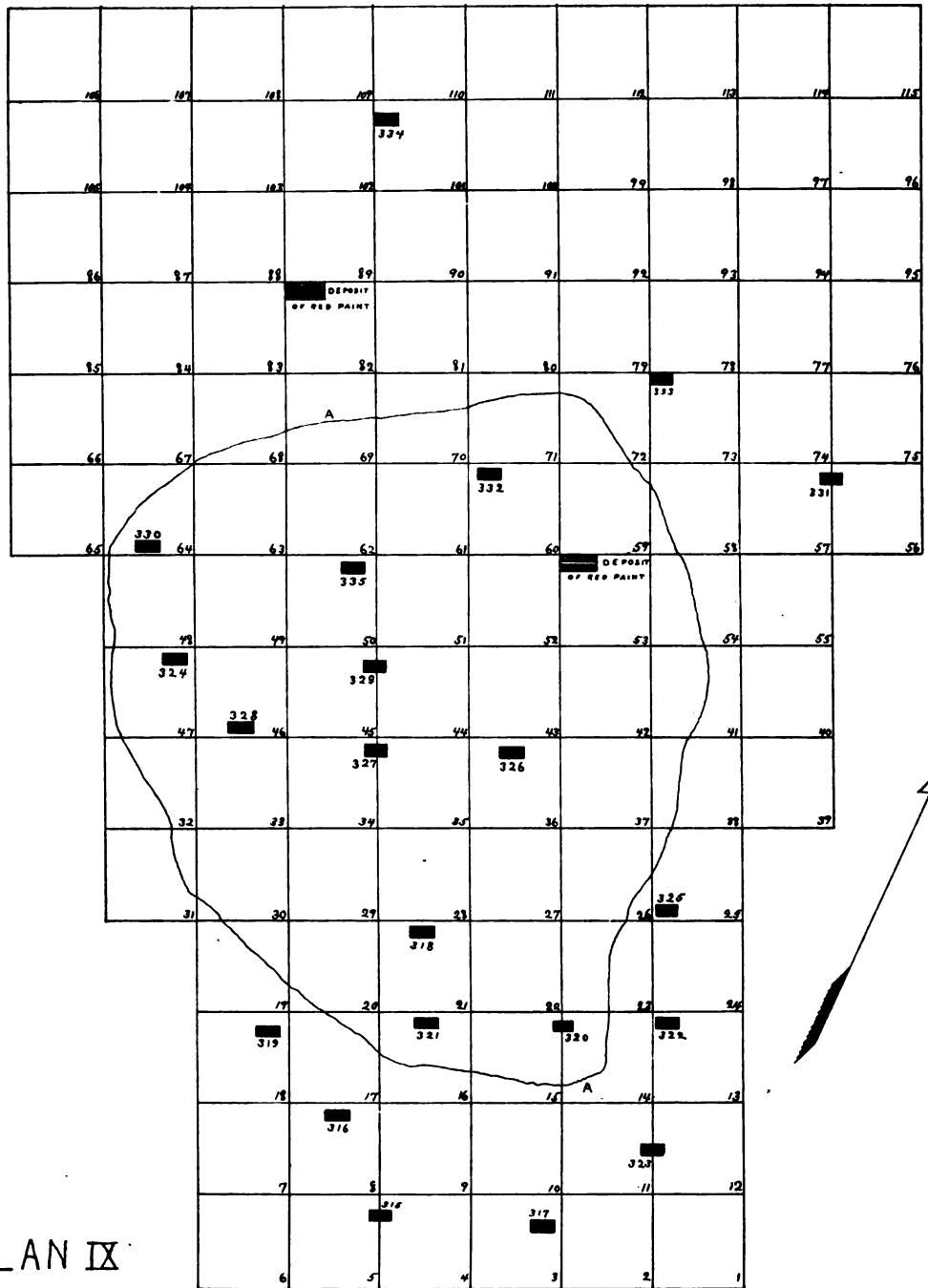
WINSLOW — THE LANCASTER CEMETERY. 1919

In the town of Winslow, which is on the east bank of the Kennebec opposite Waterville, Mr. Fred Lancaster had erected a saw mill on his farm and in the summer of 1919, when he dug the pit for a large circular saw, he opened one or two Red Paint graves. A Mr. Kelliher, engaged in the clothing business in Waterville and owner of a collection of Indian specimens, went out to the site and was joined there by Mr. William W. Taylor of Boston, who had accompanied me on two or three of my expeditions, and by a Mr. Denton, also of Boston. Mr. Taylor persuaded the other two to telegraph to me to come and take charge of the cemetery, and I received their telegram and a letter on the day in September when the Connecticut River Archaeological Survey, which I had been carrying on, had ended its labors just below Springfield, Mass.

I went immediately to Winslow and on my arrival the site was turned over to me. About eight graves had already been opened. I put ten men at work in the interests of the Bangor Historical Society, since the Phillips Academy fund was exhausted. All the specimens found were first studied at Andover and then shipped to Bangor, where they are now on exhibition in the fireproof building of the Public Library and can be seen there by visitors.

The cemetery occupied a space about thirteen by seventeen meters on a knoll one hundred meters from the Sebasticook River and not more than seven meters above the level of the water. The ground was very hard and stony. We opened some thirty graves, of which twenty were under the saw mill. As the mill is about thirty meters long and very heavy, it was impossible to move it, and it was necessary to place blocks on solid stone foundations under it, before we could excavate. Then the men had to do most of the digging either sitting down or lying on their sides, so that the work was accomplished under difficulties. There may be a few graves left under the gasoline engine or heavy parts of the machinery which it was not advisable to undermine because of danger to the men.

The graves did not differ essentially from those of other cemeteries but they seemed to be nearer the surface, and the red ocher was to an unusual extent spread at a uniform depth. Thus on one side of the cemetery it



PLAN IX

LANCASTER CEMETERY, WINSLOW, MAINE

THE LINE A.A. INDICATES THAT WITHIN THIS AREA THE RED PAINT SEEMED TO HAVE BEEN SPREAD EVENLY

THE SQUARES ARE SQUARE METERS

DRAWN BY E.O. SUGDEN, NOV. 1919.

seemed to extend in a regular layer for a distance of seven or eight meters and then there was a clear break, or what would be called in geology a fault, before it was resumed. My attention was called to this by Mr. W. B. Smith, formerly of the United States Geological Survey and much interested in archaeological matters. He examined the break carefully and said that it indicated a shifting of the land and was not recent; that it was not due to any excavating done by the Indians but might have been caused by a landslide or by an earthquake. I frequently discussed with Mr. Smith the difference between the Red Paint graves and later Indian interments. In the former there is a noticeable re-stratification; the graves are so old that a re-forming of gravel layers has set in and it is difficult to trace the outlines of the excavations; while in Algonkian graves the lines of disturbance are very plain.

The regularity of the depth of the ocher layer in certain places throughout this cemetery suggested the possibility that a certain area was dug out and cleared and the layer of ocher laid down uniformly before the burials were placed upon it, as it is not reasonable to suppose that the Indians would dig so many graves separately, all to exactly the same depth. This method may have been adopted, as suggested on p. 53 in discussing Hathaway's cemetery at Passadumkeag, when the remains of those who died in the winter were kept until the ground thawed in the spring.

The contents of the graves showed some minor peculiarities. There were few plummets, only six or seven occurring in the whole cemetery, and there were few of the long fine gouges, while no effigies or crescents were discovered. Not many hammer stones were found, and iron pyrites or fire stones occurred in only three graves. The adze blades and hatchet blades were with two exceptions smaller and shorter than those found elsewhere. There were a number of chipped spear heads of the dark flint and red flint which sometimes occur, but none of felsite, the so-called Kineo stone. There were numbers of the beautiful, long slate daggers or spears, seven being found in grave 329 and a single one in another. I present illustrations of these in fig. 46, made from Mr. Sugden's drawings. One is a trifle over forty-five centimeters in length, and is the longest one ever found in a Red Paint grave. We took from the graves also a number of spear heads of translucent quartzite, that peculiar unidentified material which is common in Labrador but has never been found in a natural state, a ledge or boulder, in the State of Maine. We obtained six or seven of these translucent spear heads, some of them large but one or two small enough to be classed as arrow heads.

In all of the cemeteries careful search has been made for fragments of bones. A few scales were discovered at Hathaway's and at Emerson's, but they were so small that they could not be identified. It was therefore gratifying to find in grave 318, in the Lancaster cemetery, at a depth of thirty-five centimeters, burnt bones and fragments of unburned bones. One or two of the larger fragments seemed to us to be portions of a human skull.



FIG. 45. Working under difficulties. The saw-mill at Lancaster's. Most of the graves lay beneath these timbers.

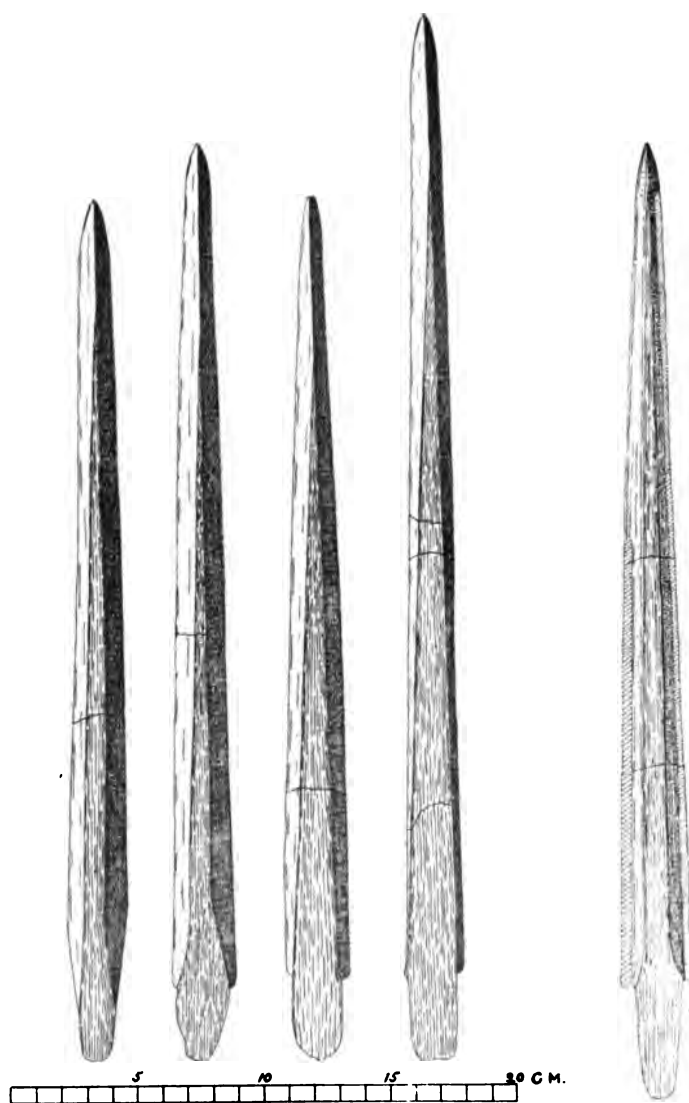


FIG. 46. Five slate spears from Lancaster's cemetery. Size shown.

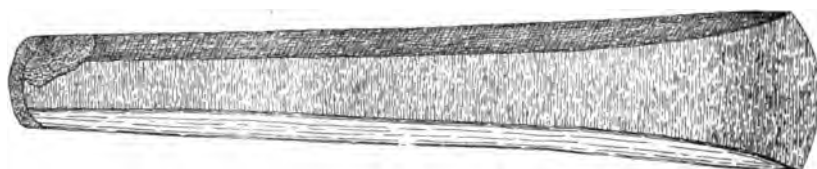


FIG. 47. Large adze blade, Lancaster's Cemetery, Grave 326. S. 1-3.

They were examined by Mr. Willoughby, who also thought they were human, and at his suggestion they were given to Dr. E. A. Hooton of Harvard University for further examination. I append his letter giving the findings.

"Jan. 9, 1920.

"Dear Mr. Moorehead, —

"I have examined the lots of bones that you left at the Museum and have secured as a check upon my findings the opinion of Dr. Glover M. Allen of the Museum of Comparative Zoölogy. Dr. Allen and I concur in the opinion that all of the remains are human, with the exception of a few isolated fragments. I have been able positively to identify specimens from the various lots as follows:

"No. A. These bones are pretty certainly human, but the fragments are so small that it is almost impossible to identify the various parts. There are, however, several small fragments of the human brain case and other fragments of long bones.

"No. B. Calcined remains of a human right temporal bone, including (1) the mastoid process; (2) portion of posterior and inferior wall of external auditory meatus including part of the vaginal process and anterior half of stylo-mastoid foramen; (3) fragment of petrous portion, including part of internal auditory meatus and base of jugular fossa; (4) anterior internal portion of glenoid fossa with part of spheno-temporal suture; (5) another fragment of mastoidal portion of same temporal bone. Remaining fragments probably human, but too small for positive identification.

"No. C. The bones contained in the chunk of limonite may or may not be human. I am unable to say.

"No. D. This lot contains, in addition to the human bones, a couple of bones probably of a large fish. All of the bones have been subjected to the action of fire. The human bones consist of: (1) distal extremity of left ulna, probably female; (2) part of the head and neck of a humerus; (3) a metacarpal bone. These bones appear to be the remains of one individual, probably an adult female.

"No.—. Unlabelled lot. (Whitish bones). Several small fragments

OBJECTS FOUND IN RED PAINT GRAVES 101

of a human skull vault (calcined), probably portions of parietal bones. The remainder of the pieces I am unable to identify with certainty.

"Sincerely yours,

"E. A. HOOTON."

In July, 1920, we went back to Lancaster's cemetery, as there was a persistent local report that many graves remained unexplored. We dug extensively and found seven or eight unimportant deposits. We also examined the Indian village site along the river and the more modern Algonkin burial ground which is described on p. 214 of this book.

OAKLAND — WENTWORTH'S CEMETERY, 1920

While the Survey was examining the Belgrade Lakes system in July, 1920, we met a Mr. Peavy who had dug up gouges and adze blades of the Red Paint People type on a ridge now occupied by a modern cemetery in the town of Oakland, at the foot of Messalonskee Lake. We visited the place but could not carry on excavations because they would have disturbed the modern graves. It is distant more than a kilometer from the nearest water, and this is the farthest from stream or lake that any Red Paint cemetery has been found.

The men continued prospecting in the neighborhood and learned that Mr. Charles Wentworth had plowed up gouges and other tools in his garden. His land is in the western part of the village of Oakland on a high ridge which overlooks the outlet of Messalonskee Lake on the south and to the north west faces an extensive low marshy place, about a kilometer distant, which was once a lake. The cemetery lies on the north slope of this ridge, about one hundred meters from the bed of the stream which once drained the bog, and sixteen meters above the level of the water. From the shores of Messalonskee Lake to the cemetery is about two hundred meters. Wentworth's cemetery lay about twelve kilometers west of Lancaster's; and is the farthest west of all that have been discovered up to the present time.

We made arrangements with Mr. Wentworth to explore the ground as soon as his potatoes were large enough to be taken up, and we found some sixty graves or deposits of ocher. About half of them contained either no objects or very few. These were the shallow graves, often within twenty or twenty-five centimeters of the surface. Here the ocher remained but the artifacts had been plowed up and removed.

No plan of the cemetery is presented here because so many of the graves had been disturbed. In this connection the local history of the spot may be mentioned. Mr. Wentworth had found numbers of artifacts during the ten years that he had owned the property. A Mr. Tozier who lived on the same farm for twenty-five or thirty years also plowed up numerous stone tools. The original owner, a Mr. Hutchings, had occupied the farm forty or fifty

years. Most of his family had died, but one very old lady visited the scene of our explorations and stated to me that when she was a girl, Mr. Hutchings frequently found Indian specimens in the garden and that large numbers had been carried away by different persons.

This must originally have been a large and important cemetery. We did not excavate all the graves because Mr. Wentworth had corn and beans planted on the west part of the land and did not wish us to dig there, although there probably are graves extending under the corn. The deeper graves that we opened contained from eight to fifteen objects each. It would be impossible to state an accurate average, but I would estimate that if the graves all contained from eight to ten objects each, there were originally some five hundred and fifty stone tools placed in the ground by the Indians, of which we recovered a trifle over two hundred.

The cemetery is interesting from the fact that it is not continuous. Beginning somewhat down from the crest of the hill and working up, we found graves at regular intervals for ten or twelve meters; then there was a space of fifteen meters in which there were but one or two graves. The burials began again to the east of this vacant part and extended about twenty meters farther to the south east. Twelve of the graves in this part of the cemetery were on the adjoining property owned by Mr. P. H. Russell. West from the extension on the Russell estate there were more graves. Whether objects were found when the foundations were dug for the house and barn fifty or sixty meters southwest from Russell's cemetery, we were unable to ascertain.

It is not necessary to show any of the objects taken from this cemetery. In grave 326 was an unusually large and fine adze blade. The edge was very thin and sharp. It is worked out very carefully, the sides beveled and one of the finest examples of art in stone from any of the Red Paint People cemeteries. Excepting this adze blade, the gouges, celts, and other tools were smaller than those from the Penobscot Valley sites. There was only one slate spear head and this was different from the long ones found in other cemeteries being flat and thin instead of hexagonal in cross section. Six or seven implements chipped from translucent quartzite or Labrador stone occurred, two of which are shown in fig. 48. Hammer stones were not common and in some graves there were no fire stones. The red paint was not especially bright.

B. DETAILED STUDY OF OBJECTS FOUND IN RED PAINT GRAVES

In the preceding pages we have described the Red Paint Cemeteries explored by the Phillips Academy expeditions and have referred to a number of sites investigated by others, notably by Mr. Charles C. Willoughby, Director of the Peabody Museum of Harvard University.†

† See note 2, p. 13.

Before drawing our conclusions as to the Red Paint People's culture, we must make a careful study of the implements, ornaments, and other objects found in the other deposits, since with the possible exception of the village site near Bangor explored by W. B. Smith,* the cemeteries and the objects found in them are our only source of information about the Red Paint People, and it is only by having a complete analysis of the types found, that we can make use of our knowledge.**

The stone implements may be roughly classified as follows:

- Gouges.* Large with oblong or angular groove
Large with V-shaped groove
Slender or chisel-shaped
- Adze blades.* Triangular or ridge-backed
Ordinary or almost flat
Knobbed
- Plummets.* Oval
Elongated oval
Effigy
- Ornaments.* Long pendants
Small perforated stones
- Problematical.* Bipennate, short wings
Crescents
- Slate spears or daggers.*
Large, hexagonal
Small, flat
- Chipped objects.*
Spear heads
Arrow heads
Knives

We shall discuss these classes of implements as found in the different cemeteries, grouping the latter in units according to locality.

THE ALAMOOSOOK UNIT

The Hartford, Emerson and Mason cemeteries may be considered together because of their proximity.† The three present some characteristics

* As this village site is at least partially Algonkian, the description of it is given on pp. 134-143, just before our discussion of the relation between the Red Paint People and Algonkians.

** Tables have been prepared which show all the dimensions of the stone tools or artifacts from the graves, and the cards are available for students of implement technology. Such detailed records are too lengthy to be inserted in this report, but they are the basis of the statements in the following pages.

† The objects found by Mr. Willoughby in excavating graves in the Soper's Knoll on the north side of Lake Alamoosook in 1892, are on exhibition in the Peabody Museum at Cambridge. They present essentially the same types in stone as those found by us in the same region, except that there are no crescents and not such a preponderance of plummets. The adze blades are large and of fine workmanship, but there are no specialized gouges, adzes or plummets.

in common, chief of which is the occurrence of specialized or double gouges, more of these having been found at Emerson's and Hartford's than elsewhere.

Gouges. The average gouge from the cemeteries in general is quite different from forms found on Algonkian village sites, being slender rather than broad, with the hollow or gouge depression short and frequently angular or oblong in outline, but sometimes V-shaped or tapering to a sharp groove five to twelve centimeters from the cutting edge. The second one in fig. 41 shows this peculiarity of the Red Paint People gouges. A small gouge in fig. 50 was found at Stevens cemetery and it is more nearly like the common Algonkian form. The latter are rather broad; the groove is carried further up — sometimes three fourths of the stone's length — and is seldom of an angular shape.

The number of narrow chisel-like gouges found at Emerson's and Hartford's is surprising. Some of them are worked down to an end one centimeter in diameter, and in one case even less than one centimeter across the blade. An interesting narrow gouge is no. 50276, which is 12.5 cm. long, 3 cm. wide at center, 2 cm. thick, cutting edge 11 mm. wide. This specimen was broken, scales having been knocked off the back for a distance of 8 cm., over one half the length of the stone. The natives had re-ground the gouge, removing the rough edges due to the break. The top is battered.

The longest gouge found in the eastern United States up to October, 1921, is no. 50266, from grave 15 of Hartford's cemetery. See fig. 16, left. Its measurements are: 37.5 cm. long, 4 cm. wide, 4 cm. thick. Another long gouge, no. 53061, was found at the same site during the second exploration. It is slightly shorter than the one described but of the same form. The tops or polls of most of the larger and finer gouges are not battered, whereas the more ordinary tools have battered tops, indicating that when in use they were hammered, probably with a wooden mallet.

Several small gouges were taken from the three Alamoosook sites. One which is both thin and small measures 5.15 cm. long, 2.75 cm. wide, and 9 mm. thick. It was in an unusual deposit, in grave 17 of Hartford's cemetery, with an effigy plummet, a hollow concretionary formation filled with red paint and other objects. Other small gouges are shorter and thicker.

A few of the gouges were "hump-backed," that is, having a profile similar to the adze blade shown at the top in fig 51.

Attention has been called to the very fine edges observed on the gouges from Mason's cemetery. The same is true of a number of specimens from Hartford's. Several of the unusually well made gouges from Mason's are so identical in form as to suggest that they are the product of one individual. These are slightly convex in outline at the center of the cutting edge. Observe the middle gouge in fig. 20, slightly squared at either side of the blade, rounded out in the center. The groove does not extend to the edge of the



FIG. 48. Projectile points of the clear quartzite or Labrador stone, from various Red Paint Ceme-
teries. Size 1-2.



FIG. 49 Large knife and projectile points from various Red Paint Cemeteries. Size about 1-2.

stone but occupies the middle portion, while a part of the original surface of the stone remains on either side of the groove or gouge depression. The same peculiarity of outline is found in many smaller gouges from Stevens's, Tarr's and other sites.

Two very unusual specimens were found in disturbed graves at Emerson's cemetery, one of which, the knobbed gouge shown in fig. 50, is unique, no other gouge like it having been found anywhere in the United States. It is no. 50507 and came from grave 68. It lay twenty-five centimeters below the surface, but we did not find it in its original position and there was no other near. Probably the other objects in this grave were scattered at the time Dr. Hamlin and Mr. Soper did the plowing referred to before, and this specimen was overlooked at that time. It measures: length, 21 cm., thickness 4 cm., greatest width, 4.5 cm., width at cutting edge 3 cm., width at top 2 cm. Its peculiarity is the eight knobs or projections worked in high relief. The top is slightly injured and the face at the top projects slightly, not in a well-defined ridge but as if a slight depression or groove had been started across the stone just below the top. The lower part is polished for a distance of six centimeters from the bit or edge, and from this point to the top of the specimen the surface is pecked but not polished or even ground. The gouge-groove is rather shallow.

The other unusual specimen from Emerson's cemetery is the combination tool, gouge at one end and adze blade at the other, shown in fig. 41. It was found in grave 100 and is no. 50625 in Phillips Academy catalogue. It is made from a slab of hard green slate and is very highly polished. It measures: length 32.5 cm., width of back at center 5 cm., width of gouge end 5.3 cm., width of adze end 3.6 cm. The front is flat, along the back is a flat ridge, 1 cm. to 1.5 cm. wide, extending 20 cm., and it is beautifully bevelled from this angular elevated back down to either side. The top or adze end is bevelled down to an angular cutting edge. The left-hand view shows the groove, gracefully tapering and extending half the length of the tool. As this implement did not conveniently lend itself to fastening in a handle, it must have been used unmounted. The only similar tool recorded is the one mentioned on page 76 as found at Sullivan Falls many years ago and observed by Mr. Stratton. Mr. Stratton says the tool he saw was nearly double the size of the one here described. Originally our specimen must have lain in a heavy deposit of ocher and pyrites, as it is much discolored, but it had been disturbed by the plow and it lay above the ocher and about 34 cm. to one side.

Adze and Hatchet Blades. Figure 42 illustrates the difference between the forms in our classification of stone tools. It shows a group of eight objects: three adze blades, one in profile; a wide hatchet or celt-like implement; two gouges; a slate spear and a hoe or digging tool. Fig. 51 presents a profile view of four adze blades from the Emerson and Haskell sites. Most

adze blades are angular in profile and some are ridged or bevelled from end to end, while a few have a knob or projection on the back. The one below in Fig. 51 is a typical angular or bevelled shape; the one at the top is knobbed or "humpbacked." Others are highly specialized, such as the unusual specimen shown in fig. 47, which was found in Lancaster's cemetery and is one of the best examples of work in stone by the Red Paint People. It is 32 cm. long, 6.2 cm. wide across the blade and 6.66 cm. wide across the top.

These heavy, angular objects have been classified by Mr. Willoughby and others as adze blades, and probably they were used as such.* The broad, thin blades were probably used as war hatchets or as chopping and cutting tools. Some of these are large, notably the second one from the left in fig. 42, from Haskell's cemetery, which is about 30 cm. in length, but thin. It is made of banded slate and is highly polished. Many of the hatchets and adze blades show high polish and considerable use, and as in the case of the gouges, the tops or polls of the rougher ones are battered owing to hammering, while the specimens exhibiting better workmanship are seldom broken at the top. The hatchet blades vary from the large ones described above down to those only 10 cm. in length. One small, narrow, chisel-like object, 7 cm. long and only 7 mm. wide, was found in the earth thrown out during the excavation of Hartford's cemetery. It probably had been in a grave. It is the smallest object found by us in the four hundred and forty graves opened, and will compare with the small chisel or celt blades found in shell heaps along the coast. The true celt, the thick, oval form common on Algonkin Indian village sites, has never to my knowledge been found in any Red Paint grave. There are a few tools that approach that type, but they are not exactly of the well known celt form.

In fig. 10 is a group of objects showing chiefly the average hatchet blades from the graves. Attention is called to the fact that nearly all the cutting edges are square or angular. After once studying these Red Paint People artifacts, one can affirm with certainty that they do not, as a class, occur elsewhere in the United States.

Plummets. Many plummets were found in the cemeteries of the Alamoosook unit, some graves containing as many of these objects as of tools. Mr. Willoughby also found them in numbers in the mound which he examined near Emerson's location. The ordinary forms of plummets from various sites are shown in fig. 52, four of these specimens being from Hartford's and Emerson's and four from Haskell's and Sullivan Falls. Beside the common plummets, some specialized forms were found at Hartford's. Of this class is the whale-like specimen, no. 50277, shown in fig. 39, which should not be classed as an ordinary plummet. Its measurements are: length 6.75 cm.,

* See "The Adze and the Ungrooved Axe of the New England Indians," Amer. Anthropol., Vol. IX, 1907, p. 296.



FIG. 50. Front and side view of knobbed gouge (50507) from grave 68 at Emerson's. Size about 1-2. Gouge from Stevenz' Cemetery (Scale about 3-5). Introduced for comparison. See page 107.



FIG 51. Profiles of hump-backed adze blades from Emerson's and Haskell's. S. about 8-7.

width 3.75 cm, thickness 2.25 cm. This and the other shapes in fig. 39 may be classed as effigies rather than plummets. The Red Paint People did not make very clever effigies and these objects seem to mark the extent of their artistic ability. Several plummets of considerable size were taken from the Alamoosook sites, some of which are in the Andover collection. When studied these are seen to have one side intentionally flattened, so that they rest in one position, while the ordinary round plummet will roll about. The same feature is found in several of the larger plummets 12 to 17 cm. in length, in the collections at Salem and Cambridge, which are not from Red Paint graves. This flattening of one side gives us some light on the possible use of these objects. It would add nothing to their usefulness as sinkers, but if they were so worked in order that they might be set in a certain position, the charm, effigy, or problematical theory of their purpose seems to be more correct. Two of these large ones are presented in fig. 53.

Problematical Forms and Pendants. In the three cemeteries composing the Alamoosook unit there were none of the long, perforated pendants or problematical forms, such as occur at Godfrey's and Hathaway's sites, but we did find two or three of the bipennate stones and several shorter ornaments of the Hathaway types. One of the bipennates shown in fig. 54 is practically of the same character as several found in the two cemeteries just mentioned. Two of the slender pendants are shown in fig. 55. The Red Paint People made use of very crude as well as finely finished ornamental stones, and one of those shown in the above figure is from the Sullivan Falls cemetery. They are ordinary thin sandstone slabs, crudely fashioned and perforated.

Crescents have been found in most of the cemeteries with the exception of Wentworth's and Lancaster's, and they form a most interesting series. Two are shown in fig. 27, two others in fig. 54, and one in fig. 58, is from grave 121 of Sullivan Falls.

A careful consideration of the problematical forms from these graves has led to the conclusion that the bipennate, crescent, and long pendants are very old forms of ornament in stone.*

Chipped Objects. Numbers of chipped stone objects were found in the Alamoosook unit, some small but most of them too large for use as arrow heads. Figs. 48 and 49 present some of these artifacts from the Alamoosook and other sites. There are no marked local differences in the shapes. The majority are projectile points with barbed or shouldered tops, for use as arrow or spear heads. The points are generally narrow and the shoulders not pronounced, the simpler stemmed forms predominating, although three barbed specimens are among those shown. It is seldom that a knife is found, but one such exception is shown in the large object in the center of fig. 49.

* See "Stone Ornaments," etc., by W. K. Moorehead. Andover, 1918.

This is 25 cm. long, 6.8 cm. wide at the base, 8 cm. across the middle, and 7 mm. thick in the middle, and is worked out of a block of Kineo felsite. It was found by Mr. Soper, together with two other similar blades, in a large quantity of red paint about three hundred meters north east of the outlet of Lake Alamoosook. This was not a cemetery but an isolated grave. We dug pits for some distance about the spot but could find no other deposit. Next to this knife, the largest chipped object found, a spear head, occurred in grave 74 and is numbered 50535. It measures 17 cm. in length, and 5 cm. in width. It is unusual to find more than one or two chipped objects in the same deposit, but in grave 14 at Hartford's three long chipped projectile points lay in the ocher. They are nos. 50261, 50262, and 50263, and measure respectively: 19 cm. x 3.9 cm. x 11 mm.; 12.9 cm. x 3.3 cm. x 13 mm.; 11.8 cm. x 3.5 cm. x 9 mm. In fig. 48, all the specimens are made of a variety of translucent quartzite which is known to exist in Labrador but at present writing has not been found *in situ* in the State of Maine. The geologist, Mr. W. B. Smith, has searched in Maine for a deposit but has been unable to find one.

Polished Slate Spears. The Alamoosook unit produced very few of the long slender slate spears or daggers. The one shown in fig. 24, in position in a grave at Emerson's, is the only one found intact, although there were some fragments. As there were long slender spear points taken from the graves at Bucksport, Ellsworth, and Blue Hill, by Mr. Willoughby, Mr. Woodcock, Mr. Haskell, and others, it seems strange that, with four Red Paint cemeteries on the shores of or near to Lake Alamoosook, practically none of these objects were placed in the graves there. However, there were many short spear points, most of them exceedingly well wrought and highly polished. In figs. 57 and 58 a number of these objects from several different cemeteries are shown together, as the types are the same everywhere. Of the twelve shown, five are from Emerson's cemetery, three from Stevens's, and one each from Sullivan Falls, Hartford's, Wentworth's and Haskell's. The narrow, thin forms in fig. 57 came, two from Emerson's and one each from Haskell's and Sullivan Falls. There appear to be few if any of these objects from the graves in Godfrey's and Hathaway's cemeteries, up the Penobscot. The small spear heads are broad and flat, the longer ones narrow and usually hexagonal in cross section, seldom flat. With few exceptions all the slate spear heads are delicately worked out, great care being exercised in their manufacture. The larger ones are wrought out of the best ribbon slate. Fig. 58 shows the finest specimens taken from the graves, except one found at Winslow in the Lancaster cemetery, which is now in the collection of the Bangor Historical Society. The specimen shown in the upper left corner in fig. 58 has a grooved and notched top, such as has not been observed in other examples.

Stones, Pebbles, Grinding Tools, etc. Reference has been made a number

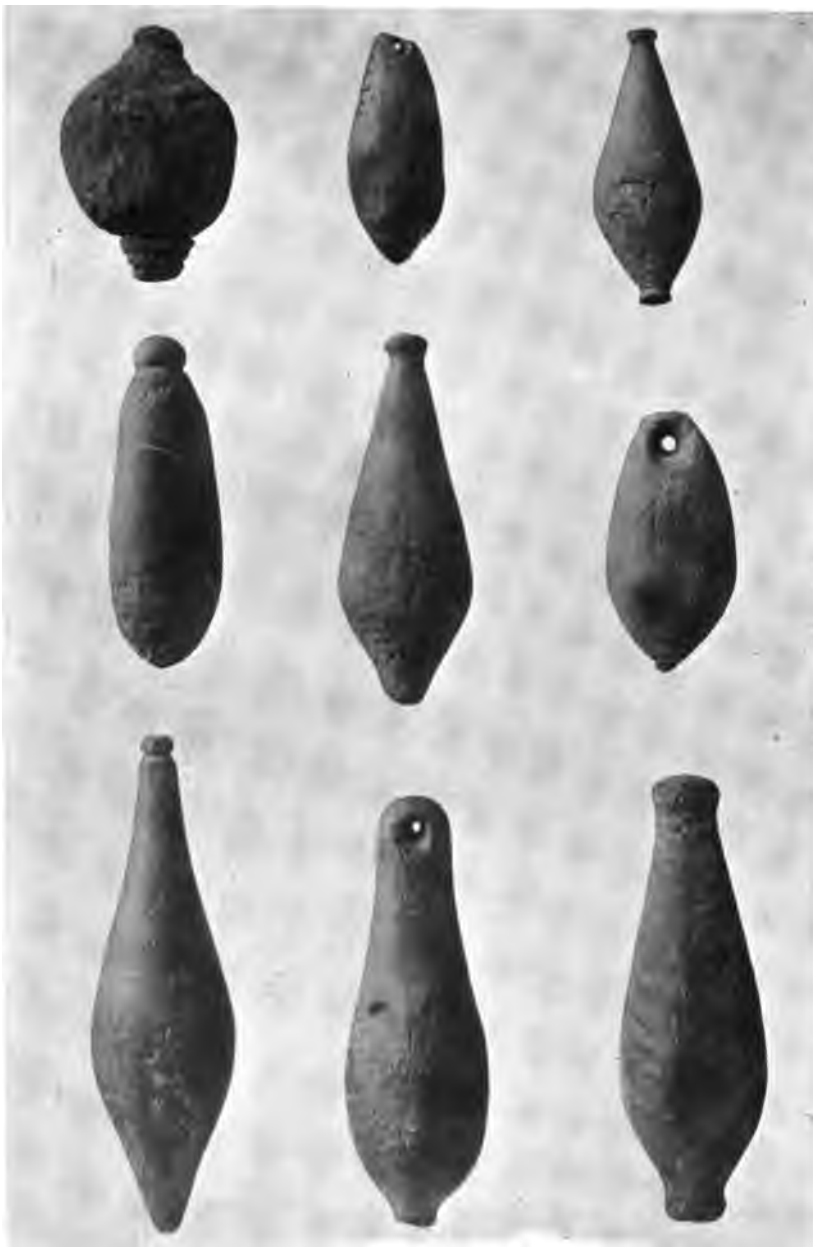


FIG. 52. Series of plummets from the cemeteries. S. about 2-3. See page 108.

of times to the large stones that sometimes occur beside the grave or deposit. One of these is shown in fig. 23, which represents grave 61 of Emerson's cemetery, as it was found. Two sides of this rock were stained red by the ocher.

In proportion to the number of graves found at Mason's, the bright colored pebbles two or three centimeters in diameter, the so-called "lucky stones," were rather numerous. As they show no signs of artificial fashioning they were apparently picked up by the natives along the beach because the color attracted them. Similar pebbles found at Godfrey's cemetery showed signs of abrasion, but the Emerson and Mason stones did not.

In Hartford's site were several of the thin flat sandstone or shale rubbing or smoothing stones and also a few larger and thicker stone slabs. Some of these are perhaps large enough to have been used to grind corn on. In this cemetery as well as at Emerson's, but not at Mason's, there were a number of very rude and rough objects of stone. These have been observed in other cemeteries, particularly at the Tarr site on Georges River. In the same cemetery there would occur graves containing objects carefully wrought and polished and also interments with which there were very few implements and these of coarse and crude manufacture.

From the tabulation of the details of all these objects little more was learned than from a general study of the collection. The exact use of many of the specimens perhaps will never be known, as no one has seen them hafted and in the hands of their Indian owners. Experiments should however be made at some future time, with these tools inserted in various kinds of handles. From such a study many details of interest and value to science might be obtained.

THE ELLSWORTH UNIT

The cemeteries at Sullivan Falls and Blue Hill (Haskell's) and the Ellsworth site explored about thirty years ago by Mr. Willoughby may be taken together as forming the Ellsworth unit. The last named is approximately the same distance from Lake Alamoosook as from Blue Hill, but the presence of slate spears seem to relate this site culturally more closely with the latter. Sullivan Falls seems somewhat different from the others, but as at least four fifths of it had been dug out during the railroad operations referred to above, our comparisons cannot in any case be exact. We found there no long slate spears and no large objects, no perforated stones or problematical forms, while only one or two crescents were secured. Our field records of Haskell's cemetery are greatly inferior to Mr. Willoughby's at Alamoosook, because, as explained on page 28, it was not possible for us to make detailed observations. We will confine our text and illustrations here to noting the differences between these three sites in general and other areas and sites, the reader taking it for granted that the ordinary types found at Alamoosook occur here also.

The Sullivan Falls specimens are stained by yellow ocher, which predominated there. Much of the decayed pyrites, of which there was a great deal in all the Sullivan Falls graves, was also a bright yellow. Some of our graves at Orland and one of the Ellsworth graves show the presence of yellow ocher instead of red, and Mr. Willoughby has expressed the opinion that this yellow powder may be due to decay of iron pyrites. Many of the pebbles containing iron are yellow or have turned yellow upon disintegration.

The striking feature of Haskell's cemetery was the number of long dagger-like slate points. We have on exhibition at Andover eleven perfect ones, six half lengths, and three broken ones of which a third of the length remains. The Bangor Historical Society has a perfect one. Mr. Haskell had at the time of our exploration some three or four, the workmen two or three, and Mr. Smith has recovered several, hence we may assume that the Haskell cemetery originally contained as many as thirty and perhaps more of these delicate objects.

Next to the slate points, the size and symmetry of the adze and hatchet blades should be noted. Some of these have been shown in connection with the Alamoosook specimens in figs. 42 and 51.

The Ellsworth unit produced not a few interesting plummets. Four of the more ordinary shapes from Haskell's and Sullivan Falls are shown in figs. 52 (nos. 52378, 52460, 52524, 52531) and all specialized plummets in figs. 59 and 60. The one on the lower left (fig. 54), from Sullivan Falls, suggests a human trunk.* Dotted lines and grooves seem to have been the favorite decorations at Sullivan Falls. At Haskell's there were doubly grooved plummets and also the globular form shown in fig. 52 at the top. A peculiarity was noted in the Hathaway plummets, the groove or neck being unusually wide, whereas in most plummets it is a deep, narrow cut or line.

Inspection of the figures scattered through this report will show that the objects classed as plummets and effigies might be arranged in a single series with no sharp line of demarcation, although the extremes would be clearly differentiated. The same is true of certain other types or artifacts. A graduated series of objects, carefully selected, may begin with one well-established type and end with another. Hence one observer will classify a grooved or notched stone as a plummet and another student consider it a small pendant or effigy.

THE BANGOR UNIT

Under this head we include Godfrey's cemetery at Oldtown, the W. B. Smith village-cemetery site above Bangor, and two sites on the Passadum-

* Probably the workmen at both these sites discarded many plummets and natural concretions, thinking them to be ordinary stones.

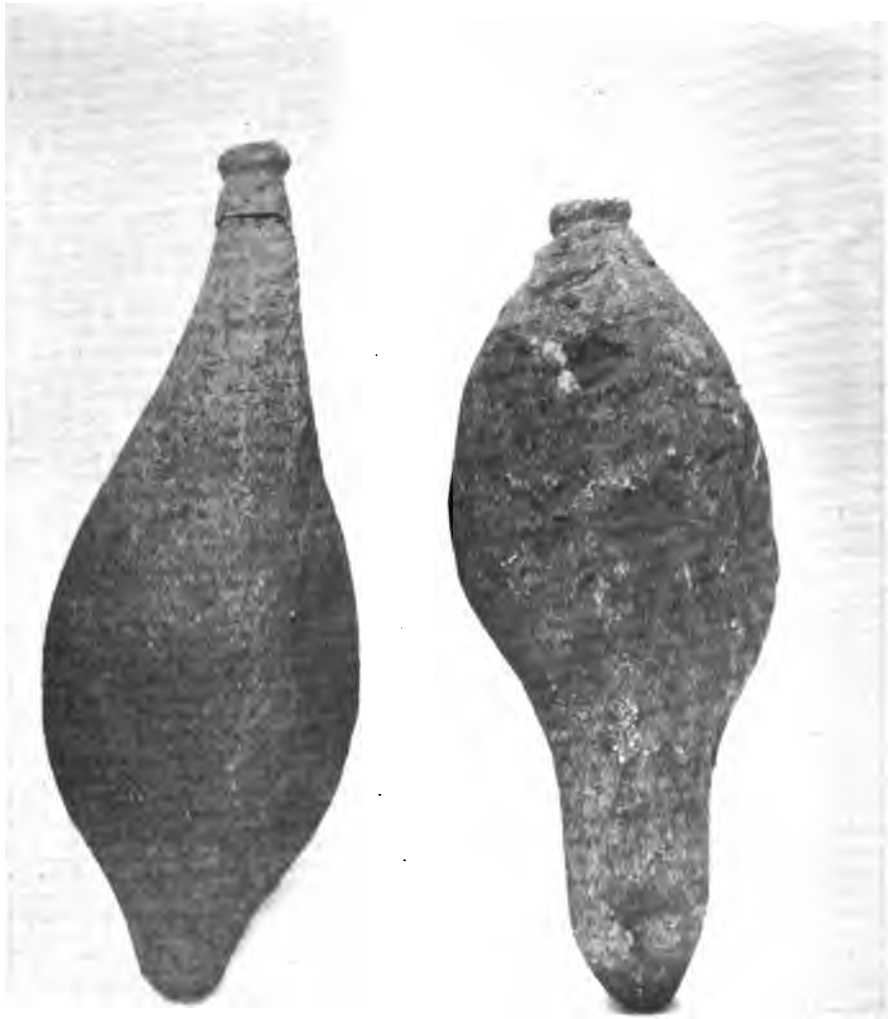


FIG. 53. Two large plummets. One to the right from Stevens', the other from Hartford's. Size. 5-7.



FIG. 54. Six objects from the cemeteries. At the top, to left, one of the digging tools or hoes. These are never found in the graves. Below a specialized plummet from Sullivan Falls. At the top, to the right, a crescent from Sullivan Falls; below a specialized plummet from Haskell's; next a flat, perforated crescent (thin sandstone) from Hartford's. Lower right hand corner pennate form from Emerson's. S. 2-3.



FIG. 55. Three small, thin, sandstone ornaments and a long needle-shaped object from Hartford, and Sullivan Falls Cemeteries. S. 1-2.



Fig. 56. The longer slate spears from Emerson's, Haskell's and Stevens' Cemeteries. Attention is called to the one at the right which is unfinished. S. 2-3.

keag, Hathaway's and the sand-pit cemetery described below. Of the four the second is by far the most important and it is treated of at length in our conclusions as to the Red Paint People. See p. 134 to 143.

The sand pit is in a long ridge composed of very fine clear sand, on the north side of Passadumkeag stream, about a kilometer above the village of Passadumkeag. A number of graves were once found here by men engaged in hauling sand, and Mr. Marks, who was present when this discovery was made, secured five gouges of different forms from any previously known. They are nos. 50976, 50977, 50978, 50981 and 50991 in the Andover catalogue. We saw several more of these thin, beautifully wrought gouges in the possession of a Mr. Whittier when we were at Passadumkeag in 1912. All these gouges possess very graceful curves and lines. They were made of selected slabs of a fine hard sandstone and each tool, after shaping, was given a high polish. The three largest are shown in fig. 61. They all have very sharp edges and in two of them the groove is V-shaped, being exceedingly wide at the cutting edge and narrowing almost to a point at the top. Forms so different from those found in other Red Paint graves seemed to indicate a special development in gouge making among the people who buried in this spot, and prompted us to make further diligent search. We dug many holes, but could find no more graves in the sand pit.

A number of gouges of very fine green slate and light green granite were found in the Hathaway cemetery. The workmanship was of the same general character and the tools were apparently made by a few individuals. No such definite statement can be made of any other cemetery, but Hathaway's, being concentrated and undisturbed, presented an opportunity not found elsewhere, for detailed study of local characteristics. Careful examination of the gouges, ornaments and other objects, in their technique of pecking, polishing and sharpening, and especially in their form and outline, material, etc., clearly indicate that the individuals who made use of them followed certain definite patterns and processes. While not wishing to go too far in drawing conclusions, the writer is of the opinion that we have here the results of skilled workmanship, the objects being apparently made in one village and perhaps by members of one clan or family. Figs. 16, 17, 35 and 41 show some of these artifacts. There were a few rough tools at Hathaway's, but the average excellence was much higher than in other places, excepting Blue Hill, which is in a class by itself.

This cemetery at Passadumkeag lay near enough to Godfrey's at Oldtown to be treated in conjunction with it. In both of them the dominant feature was the number of long, perforated problematical forms, [such as have been discussed on p. 54], Mr. Godfrey found twenty-one in his cemetery. Six from the Hathaway site are shown in fig. 35, about one third size. No. 50816 is of fine-grained sandstone. It was found in grave 150 together with two others, one of which varies from the prevailing type in

being convex on one edge and straight on the other, while the third one was smaller. These forms are usually slender, seldom broad or oval. These long pendants seem to occur chiefly in graves where there are large stone tools, and have not been found at sites where small stone objects predominate, such as Stevens's, Emerson's, Tarr's, or Sullivan Falls. An exception is Blue Hill, where many finely wrought large objects occurred in most of the graves, but there were none of the forms just described.

These pendants have been thought by some to be tool-sharpeners or special rubbing or polishing stones, but the materials of which they are made are too frail and soft to serve satisfactorily for grinding, and careful inspection of the surfaces fails to reveal any hollows or depressions due to continuous rubbing. They are also not stout enough to give the heavy blows necessary in fighting or in hunting, without breaking. On the whole, the term *ornament* may most appropriately be applied to them. Like all other objects found in Red Paint Graves, they are in no special position, and we can obtain no clue to their use from this source. If the skeletons had been preserved, it is quite possible that one might get some light on this and other mysteries, through the relative position of objects upon the arms, breast, or other parts of the body.

Adze blades were common in the Bangor unit but not many of the smaller, thin hatchet blades or celts occurred. Godfrey found numbers of chipped objects on his site but we observed that they were scarce at Hathaway's. We found two bipennate forms and Mr. Godfrey obtained five from his graves. He lists in his catalogue a bird stone, sixty-one gouges, eight adze blades, three hatchets, and various small hard pebbles, plummets and other forms.

In the Hathaway graves there was so much ocher, both red and yellow, that a great many of the objects were badly disintegrated. There was more ocher here than in any other of the cemeteries examined by our survey.

THE ST. GEORGES RIVER UNIT

The three cemeteries in the Georges River valley, Hart's Falls, Tarrs, and Stevens's, all lie within ten kilometers of each other, making this unit more concentrated than any other except that at Lake Alamoosook. There is not much to be said with reference to the specimens found except that the implements from the Tarr and Stevens cemeteries and most of those from Hart's Falls were rather small, being below the general average in size.

Hart's Falls cemetery was dug out some twenty years ago by Dr. Alden and a Mr. Leach. No record of their excavations was kept but some interesting things were found. A fish effigy made of fine-grained sandstone, shown in fig. 39, is probably the best aboriginal carving from any of the Red Paint People graves. One of the long slate daggers or spears shown in fig. 62 is also from Hart's Falls. They are almost too broad to be classed as spear

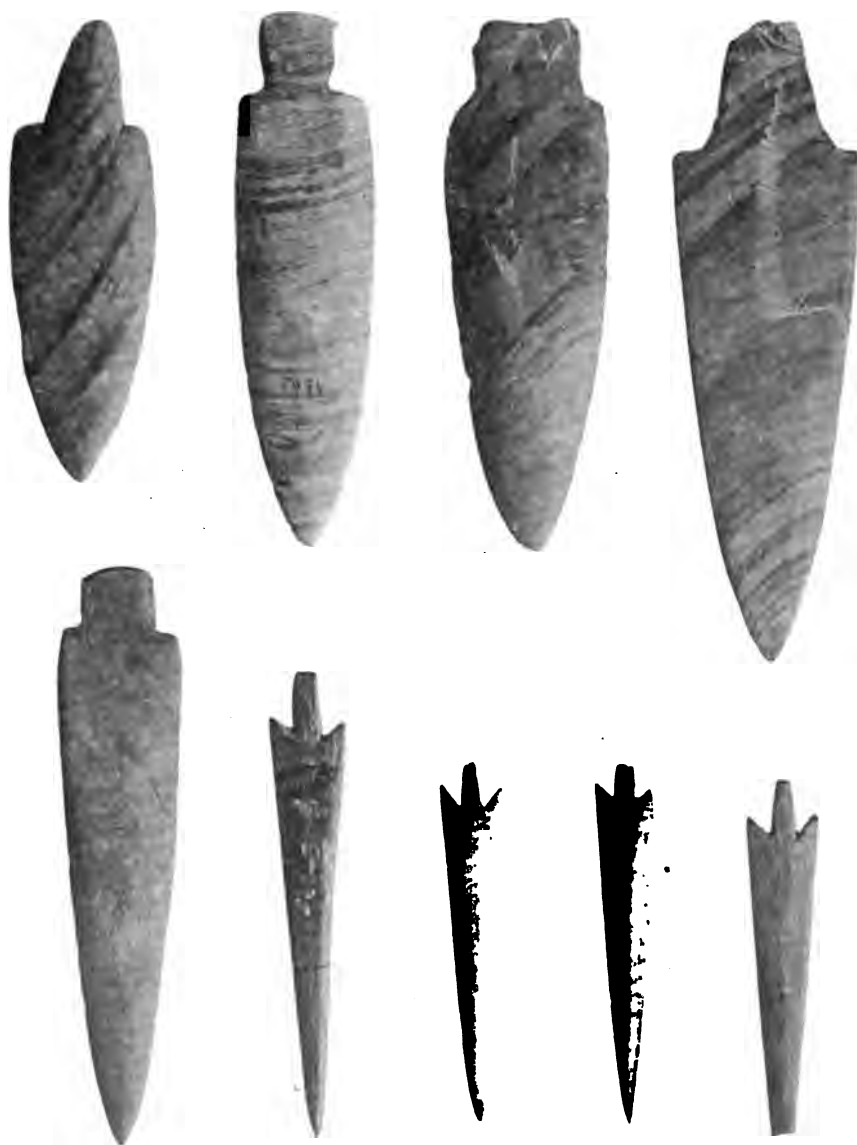


Fig. 57. The smaller slate, projectile points indicating for the most part high workmanship. From various sites. S. 1-2.



FIG. 58. Specialized slate spear points, both large and small, a crescent and a problematical form. S. 5-8.

heads. The larger one has a well developed handle which fits the hand most conveniently. It was probably used as a hand weapon and not hafted. This one is 30 cm., the other 23 cm. long. Both are highly polished and very carefully wrought into form.

An unfinished slate spear from Stevens's is shown in fig. 56 at the right. It has been chipped out but not ground or polished. This is wider than the average slate spear and somewhat shorter, being 23 cm. in length. When finished it would not have been of the hexagonal type, but of the flat variety. The broken spear next it, no. 59147 from Hart's Falls, is also flat. Of the other two in the group, from Emerson's and Haskell's cemeteries, the one at the right is hexagonal. Attention is called to the differences in the tops, to their notches near the shoulders, and the form of the bases.

In Stevens's cemetery there were some small slate points similar to those shown in fig. 57. Small hatchet blades preponderated rather than large adze blades or large gouges. There was one very large plummet perforated at one end and grooved at the other which is shown in fig. 53, together with a similar object from Hartford's. It is 18 cm. in length and 8 cm. in thickness, the neck being 4 cm. broad. Numbers of crescents with some small effigies and unusual forms in ornaments occurred on this site. Fig. 58 shows one of the problematical forms found here. It is a small stone with eight perforations for which we can assign no other use than ornamentation. Another is a long awl-like object perforated at the top and shown in fig. 63. The others are an animal head and a peculiar diamond-shaped plummet. These forms probably indicate individual fancy and manufacture on the part of the native and cannot be classified as types.

A few centimeters below the sod in the Stevens and other cemeteries were found several broad tools of the form shown in the upper left specimen in fig. 54. We took them to be stone hoes that were used in digging the graves. None of them were ever found in the graves themselves.

There is little to add to these brief observations on Stevens's cemetery, since the prevailing forms are of the same character as those described on preceding pages.

THE KENNEBEC UNIT

This comprehends Lancaster's cemetery in the town of Winslow, Wentworth's cemetery at Oakland and a cemetery in Waterville on the bank of the Kennebec, which was destroyed some thirty years ago. Some objects from the Kennebec cemetery are exhibited in the Peabody Museum. They include a number of long perforated ornaments and a long, light spear of granite, angular in section and measuring about 31 cm. in length. It is not very well made, only the point and part of the shaft being fully worked, the handle left rough. The other objects shown are practically the same as those found in the Lancaster and Wentworth sites.

REVIEW AND CONCLUSIONS

In our descriptions of cemeteries and types of artifacts we have presented various observations which bear directly on the culture of the Red Paint People. These should now be summed up and some special observations made upon the peculiarities of this culture so far as we are able to determine them after an examination of many graves, and upon its relation to other aboriginal cultures of North America.

From all that the writer of this report can ascertain, the credit for the original discovery of this peculiar culture belongs to a citizen of Maine, Dr. Augustus C. Hamlin of Bangor. He was much interested in the history of the state and nearly fifty years ago he discovered numbers of stone implements imbedded in deposits of brilliant red ocher. In the early eighties at a meeting of the American Association for the Advancement of Science, he called the attention of the late Professor Frederick W. Putnam, of Harvard University, to these burials, and Professor Putnam, realizing the importance of the discovery, detailed his assistant, Mr. Charles C. Willoughby to investigate. Between 1888 and 1892 Mr. Willoughby went to Maine and excavated the three cemeteries to which we have often referred,—one near Bucksport, another on Lake Alamoosook, and a third at Ellsworth—all lying within a radius of twenty-seven kilometers.

Nearly thirty prehistoric burial places have now been discovered or are known to have existed in the State of Maine, which must be classed together because of the similarity of culture which they present. The people to whom they belong have been named the Red Paint People, as explained above, because the most conspicuous feature of their culture is the use of powdered hematite or red ocher in considerable quantity, with each interment. In the case of graves discovered and destroyed many years ago, we often have no other evidence of their character than the tradition of red paint, but when the contents are preserved, the occurrence of certain types of stone artifacts, showing only local variation in manufacture and distribution, is an almost equally important ground for our classification. Less tangible but still important evidence is the appearance of great antiquity in the graves themselves and in their contents. This condition can be fully appreciated only after long and close observation on the spot. It includes the almost complete disappearance of human remains, the disintegration of many of the stone implements as well as of the iron pyrites, and the absence in most cases of any clear outlines of graves or pits, due to the re-stratification of the gravel or other soil in which they were dug.

The belt or area occupied by the known Red Paint People cemeteries is about one hundred and ninety-five kilometers north and south and one hundred and twenty-five east and west, from Mt. Kineo to Frenchman's Bay and from Sullivan Falls to Oakland. There may be others beyond these

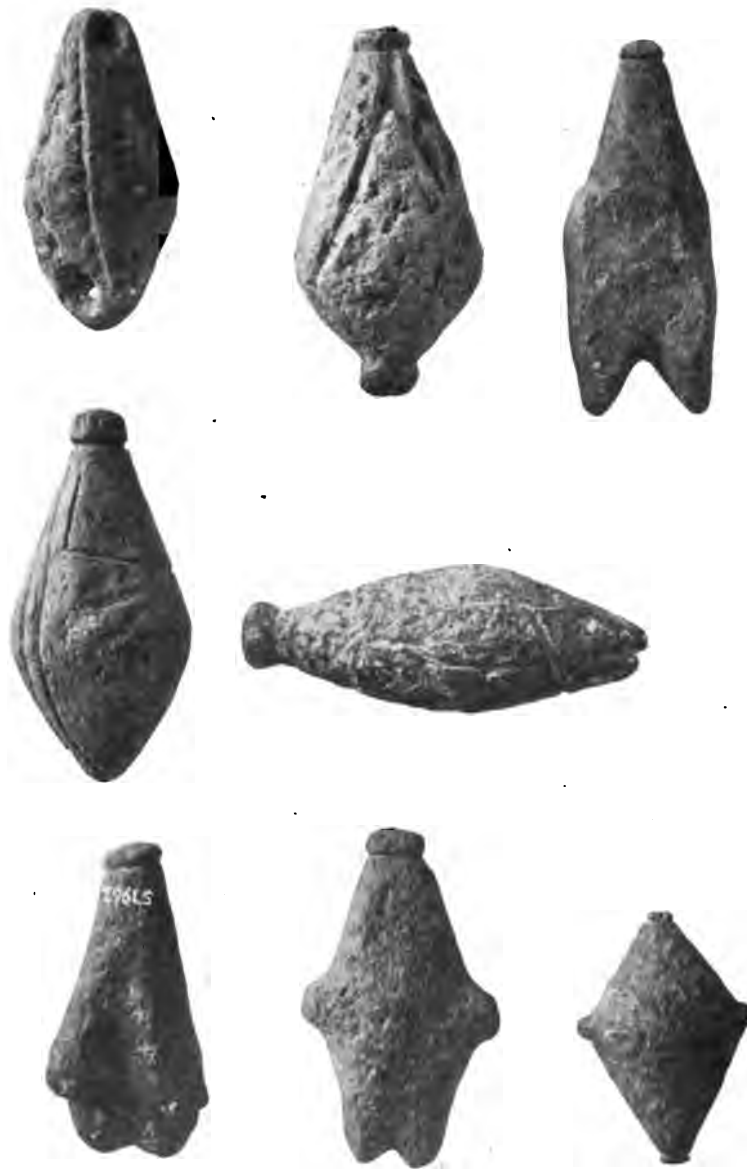


FIG. 59. Specialized plummets from the various cemeteries. Some of them are decorated with incised lines, notably the one in the center on the left. A drawing is presented of this in fig. 60, full size. In the lower left hand corner is an imitation of a deer's foot. S. about 5-8.

limits, but up to the present writing we have not been able to find any. None were discovered in the St. Croix and Grand Lakes region or on the middle St. John, although we observed a typical sand-stone pendant, some thirty centimeters long, in the possession of a doctor at Princeton on the St. Croix. Whether the culture will be found to extend east of the Machias valley and into New Brunswick and Nova Scotia is problematical. No work has been done in that section.

We give below the names of twenty-three Red Paint Cemeteries of which there is some record, with data as to when and by whom they were excavated, and where the objects found are preserved so far as is known. A few other cemeteries are known which have not been explored. In the case of three, permission to do this cannot be obtained from the owners of the land. Probably there are others in localities where farmers have plowed up the well known types. We have prospected in many such places but were never able to find the exact spot where burials had been made.

The total number of graves opened by the Phillips Academy survey at twelve sites is approximately four hundred and forty. The estimated total for the twenty-three cemeteries is fourteen hundred and forty. This estimate, apart from the writer's personal observation, is based upon conversation with witnesses who had been present when the sites were opened and upon comparisons between the number of graves found in undisturbed sites and the total number of ocher deposits in disturbed sites, where many traces of ocher are found near the surface without any buried objects.

It would be impossible to state accurately the total number of objects in the conjectural fourteen hundred and forty graves, but as a conservative estimate I would suggest an average of five objects to each grave, making a total of seventy two hundred artifacts and other objects. The correct number may be more or possibly less.

List of Red Paint Cemeteries, arranged by locality:

Kineo Hotel site, Mt. Kineo. A few graves found many years ago. Destroyed by hotel workmen.

Wentworth cemetery, Oakland 1920. Phillips Academy. Most of the objects are in Dr. J. H. Wilson's Museum at Castine.

Kennebec cemetery, Waterville. Destroyed thirty years ago. A few objects in Peabody Museum.

Lancaster's cemetery, Winslow. 1919. Bangor Historical Society.

Pemaquid Pond cemetery, Pemaquid. Destroyed twenty-five years ago. Arthur Phelps. Some objects in Peabody Museum.

Hart's Falls, Georges River. Opened many years ago by Dr. Alden and Mr. Leach. Two hundred objects in possession of A. C. Gannett, for Fort Weston Museum, Augusta.

Tarr's cemetery, Warren. 1915. Some taken by visitors. Phillips Academy.

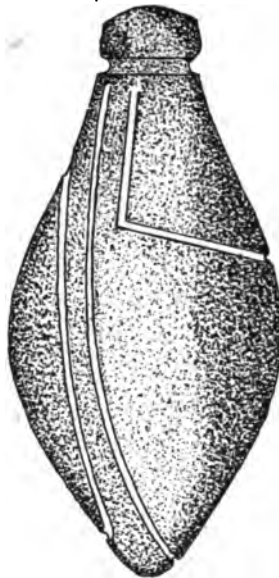


FIG. 60. Full size drawing showing markings on the plummet referred to in fig. 59. From Haskell's.

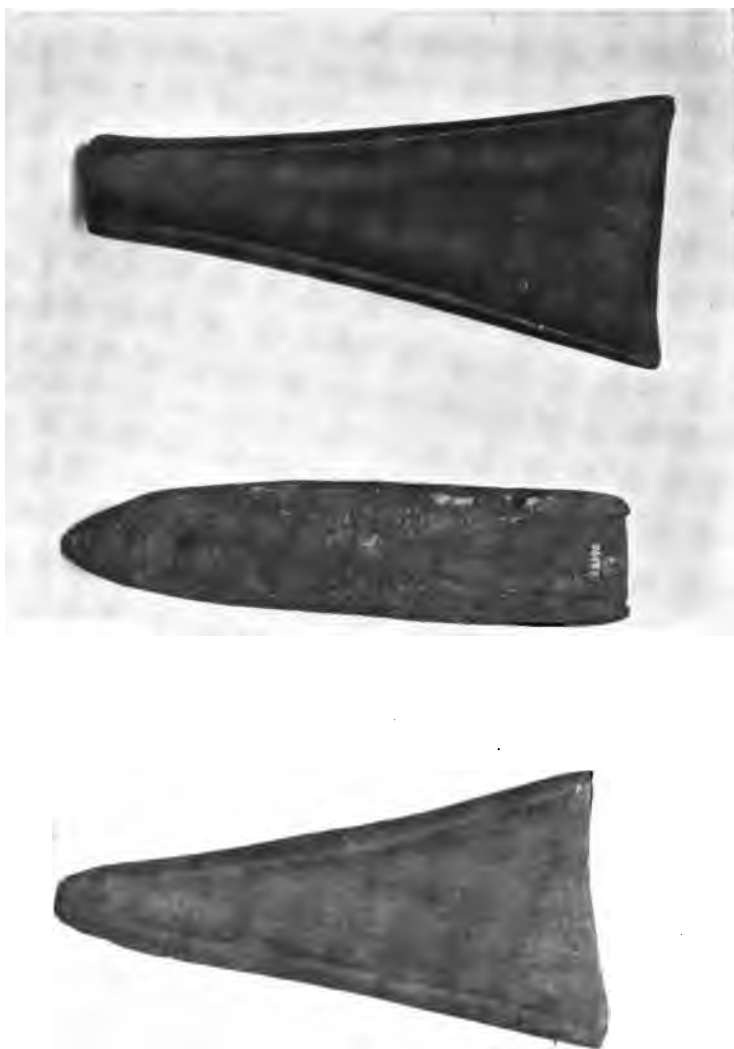


FIG. 61. Two flaring gouges and a specialized gouge from Hathaway's Cemetery. See p. 120. Size about 1-2.

Stevens's cemetery, Warren. 1915. Phillips Academy.
 Sand pit cemetery, Passadumkeag. Destroyed about twenty years ago. Some objects in A. E. Marks collection at Phillips Academy, others lost.

Hathaway's cemetery, Passadumkeag. 1912. Phillips Academy.

Godfrey's cemetery, Oldtown. 1890-1919. Fred Godfrey and Phillips Academy.

Village cemetery site above Bangor. 1913-1916. W. B. Smith.

Center of Bucksport town. Many graves found fifty or more years ago. Destroyed.

Blodgett's tannery, Bucksport. 1891. C. C. Willoughby. Some objects in Peabody Museum.

Holway's cemetery, Orland village. 1893. A. E. Marks. Some objects in Phillips Academy Museum.

Hartford's cemetery, Orland village. 1912. Phillips Academy.

Soper's knoll cemetery, Lake Alamoosook. 1892. C. C. Willoughby. Peabody Museum.

Emerson's cemetery, Lake Alamoosook. 1912. Phillips Academy.

Mason's cemetery, Lake Alamoosook. 1912. Phillips Academy.

Ellsworth cemetery, a mile above town. 1893-94. C. C. Willoughby. Peabody Museum.

Ellsworth Falls. About 1910. Destroyed by road builders. A few objects saved by W. B. Smith.

Haskell's cemetery, Blue Hill. 1913. Phillips Academy. Largely destroyed by workmen.

Sullivan Falls cemetery, Frenchman's Bay. 1913. Phillips Academy. Largely destroyed in digging a railroad cut, about 1885.

The following table shows the number of known specimens from Red Paint graves in the United States. The figures in many cases estimates rather than accurate statements, but the general total may be accepted as not less than six thousand. How many have been lost, we do not know, but I think the percentage of preserved artifacts to the total number found is unusually high.

Phillips Academy Museum, Andover, Mass.	1720*
Walter B. Smith, Brewer, Maine.	880
State Museum, Augusta, Maine.	650

*Some of these have since been sent to other museums.

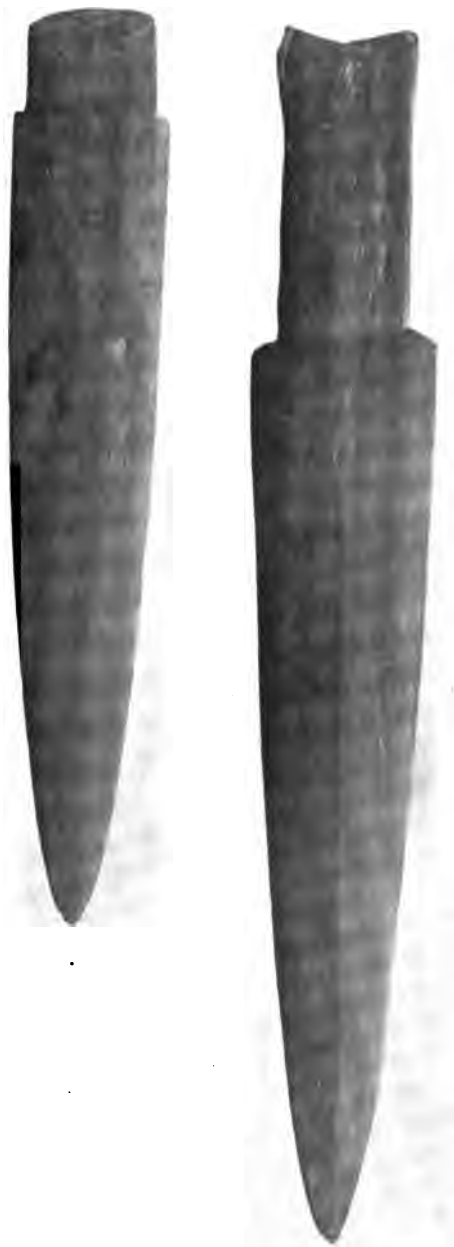


FIG. 62. To the right, long, slate, dagger-like object from Hart's Falls Cemetery; to the left, smaller implement from Holway's site at Orland. S. 1-2.



FIG. 63. Four interesting objects, 50675, a cup-like concretionary formation from Mason's; a ring-like object Emerson's; (50734) long, perforated stone needle, lower right hand corner, from Stevens'; and a curious claw-shaped object at the top, use unknown, from Stevens' Cemetery. S. 6-7.

Bangor Historical Society	650
Peabody Museum, Harvard University	350
Maine Historical Society, Portland	150
Fred Godfrey, Oldtown	210
Dr. J. Howard Wilson's Museum, Castine	200
Fort Weston Museum, Augusta	200
Museum of the American Indian, New York	125
Coburn Haskell, Blue Hill, Me.	100
R. G. Hazard	60
George F. Johnson	90
Knox Co. Historical Society, (Thomaston)	28
Smithsonian Institution, Washington, D. C.	50

 5,463

The striking feature of this culture is the large quantity of powdered hematite, apparently brought from the great natural deposit at Katahdin Iron Works in central Maine. Mr. James C. Graham of Phillips Academy has analyzed the hematite from graves at Sullivan Falls and Lake Alamoosook and from the natural deposit on the mountain side at Katahdin Iron Works. The Katahdin hematite contains 74% ferric oxide; Emerson cemetery, 55.4%; Sullivan Falls, 57.43%. This shrinkage of 17% to 19% is natural, since the hematite in the graves is more or less mixed with earth and was transported presumably in Indian canoes some two hundred kilometers. Mr. Graham believes that the Katahdin outcrop furnished the material for the Red Paint People and that the deposits in the graves are aboriginal and not obtained from traders.

Twenty percent of the stone tools have begun to disintegrate; only eighty per cent are perfect. Whether the disintegration is due to chemical action of the oxides in the nodules of iron pyrites was not known until we made a study and found that the action of the oxides does affect or eat stone. The disintegration is heaviest where the pyrites comes in contact with the tools. The red paint itself does not seem to affect the objects.

The fragments of bones found in Lancaster's cemetery at Winslow have already been identified as human. See p. 100. Another small fragment was imbedded in a mass of ocher in one of the graves of the Emerson group. This is too small for positive identification, but the opinion has been expressed that it also is human.

Any complete statement or discussion of the contents of the Red Paint graves would add to the seven classes of artifacts previously described (gouges, adze and hatchet blades, plummets, ornaments, problematical forms, slate spears, chipped objects) an eighth class to include the unworked stones or minerals, namely: hammer stones, paint grinders, bright pebbles, fire stones, iron pyrites, and the red paint itself.

Our surveys devoted a great deal of work to trying to find, if possible, the villages occupied by the Red Paint People, but were never able positively to identify any such site. Mr. Walter B. Smith of Brewer, Maine, who was with us several times and might properly be considered a member of our expeditions, was more fortunate than the others, however. He found on the east bank of the Penobscot, a few kilometers above Bangor, one of the most interesting sites in the entire state, for here we have a cemetery in which Algonkian burials are clearly superimposed upon Red Paint graves and also a nearby village site in which relics of both cultures are found on and near the surface. This is precisely what would naturally result if a site suitable for habitation were successfully occupied by an earlier and a later population.

The following description and discussion as well as the illustrations, are taken from an unpublished paper prepared by Mr. Smith and read before the Bangor Historical Society in October, 1920.

INDIAN VILLAGE SITE NEAR BANGOR

Within a few miles of Bangor, near the former head of tide, is the site of one of these ancient villages. This particular village seems to have been abandoned before the arrival of white men. The soil has been cultivated or pastured for considerably more than a century. When freshly plowed, abundant evidence of man's occupation of the spot as a village site is shown in the characteristic blackened soil, rejectage and occasional relics. See fig. 64.

Some of the relics, particularly slate lance-heads, plummets, gouges and adze-celts, though mostly fragmentary, are characteristic of the Red Paint culture. For this reason and with the hope of locating a cemetery of the Red Paint People or of finding proof that this site was occupied by them for a village, considerable systematic prospecting and digging in and about this area has been done by the writer as his time permitted during the last few seasons (1913-1916)..

Judging by the prevalence of relic-bearing debris, the village itself was situated a short distance from the edge of the river bank, just far enough to be out of sight from the water. Here the darkest colored dirt and the most numerous fragments are on a strip of land about twenty-three meters wide and four or five times as long, parallel to the river. This dark dirt varied considerably in depth but in most places was shallow enough to have been reached by deep plowing. Wherever test holes showed a greater thickness or a disturbed condition of the underlying soil, digging was resorted to. In this manner quite a number of fireholes were discovered and other ancient pits of varying sizes, dug for unknown purposes. But in neither soil, fireholes nor pits were relics found which differed noticeably from surface specimens.

Indeed complete artifacts were rare, but many small fragments of pottery, discards and chips were encountered.

The fireholes were mostly near the bank and shaped like inverted cones. They are 82 cm. to 1 1-3 meters deep and 1 to 1 2-3 meters across. They show the effects of fire and are filled with fire-burned remains, ashes, charcoal, and stones. In one or two a few fish vertebra were seen and layers of white ashes like that from burned cedar bark. The location of these holes suggests that they may have been for signal fires.

Many other places were found in which there is a concentration of materials similar to those of the fireholes, but they were shallower and broader — more saucer shaped. These probably represent lodge fires, as they are in the area which seems to have contained abodes. A few relics were found in and about these places — mostly arrow points, hammer stones, scrapers and knives; also fragments of pottery were rather common in these shallow holes.

In two places where the dark colored undersoil was dug out, straight trenches about one meter in width and depth and $5\frac{1}{2}$ to 6 meters long were revealed. Many fire-reddened stones weighing up to two or three pounds each, were found near by; also a few broken stone blades which may have been large knives or spearheads, and pieces of gouges or celts with slightly curved cutting edges, were scattered about within a third of a meter of the surface. A possible explanation of these trenches is that they were made for canoe moulds.

In none of these holes nor in other places where the soil had been disturbed to a depth of two thirds of a meter to one meter, were any traces of red paint found. It may be mentioned here, however, that fragments of worked slate as well as a few sections of slate lance heads and several unfinished pear-shaped pendants were found during this digging. These, together with the types of specimens previously found in hunting and re-hunting the plowed ground of this area for many years, will be mentioned later.

While certain relics and many fragments indicate a Red Paint period village, many other objects are surely identical with those of more recent stone-working tribes. Still others seem to belong neither to the Red Paint culture nor to this later period. Fortunately further evidence was discovered near by.

CREMATION PITS. (See fig. 68)

Adjacent to this village site on a gentle slope of slightly higher land several acres were plowed late in the fall of 1915. This plowing was deep and the upturned furrows showed at two points small, jet black areas perhaps two thirds of a meter across. The black substance was very fine in texture and seemed to be lampblack mixed with small bits of calcined bones,

badly broken arrow heads, spear points and charcoal. The soil was damp and all these fragments were as black as the substance in which they were imbedded — a condition which soon affected the digger's hands and clothing. Test holes dug near by soon showed the presence of a similar but undisturbed deposit. This when carefully excavated was found to be a bowl-shaped pit about one and one-sixth meters across and two-thirds of a meter deep. It contained the incinerated remains of bones and many fragmentary relics imbedded in a dense mass of lampblack and ashes.

At least eight such cremation pits were found within a space less than six meters square. In one case two were in contact, in another probably three, but the latter were bunched so closely that a single number is given them. The single pits varied but a few centimeters from a diameter of one and one sixth meters. The contents of all were similar and showed effects of very hot fires. The lamp-black or fine black carbon surrounded everything but was densest in the center of the pits. The outside wall and bottom were marked by a more or less clearly defined zone of dark purplish-brown ashes and baked earth, and proved clearly that the contents of the pit had been bundled up and burned in the hole. Broken arrow points and spear heads were numerous, mostly lying on top of the bones or mixed with them in the upper part of the pits.

OBJECTS FOUND IN THE CREMATION PITS

Perforators and Drills. So-called perforators or pieces representing them were found in every pit but one — from two to six or eight in each. These are the most characteristic objects of the deposits. No more careful or delicate chipping is known than that exhibited by some of these relics. A very few are entire, a few others though badly broken have been restored by cementing the pieces together, but the majority were so badly shattered by fire that they are irretrievably lost. Fig. 65 shows the longest one found, complete except for point. Its cross section is nearly square. Perforators and drills are rare on the Penobscot and it is surprising to find so many in these pits. Judging by the pieces found, no fewer than forty were buried here.

Spearheads and Arrow points. It was plainly seen that nearly all the chipped blades — arrow points and spear heads — were very thin and remarkably well made, but they formed such a jumble of fragments, some being partly fused by fire, that it was found hopeless to fit a majority of them together. A few had escaped breakage; these and the ones that could be fitted together make a total of forty-five complete or nearly complete examples saved, of a total of probably one hundred and fifty that were originally buried. Some of these are spear heads, others are undoubtedly arrow points, but the majority are of that intermediate size which is difficult to classify. The largest blades seem to be the most badly broken; the pieces found

indicate a total length of 12.4 cm. to 14 cm. for a few, while the longest complete one is a little under 10 cm. But whether large or small, they are, with few exceptions, remarkable for their thinness and uniformity of shape and their decided flare at the shoulders. Fig. 66 shows the outlines of a few average examples correctly, but fails to do justice to the excellence of the chipping.

Knives. Some of the above objects may have been used as knives. Among the other fragments are pieces representing about half a dozen blades with a plano-convex cross-section, that almost certainly were knives. Not enough material was recovered, however, to complete any single specimen.

Scrapers. Two scrapers were found. They are made of milky quartz and both were broken. They are without stems and are of the ordinary types found so plentifully hereabouts.

A variety of minerals and rocks are represented by these chipped articles. Among them the Mt. Kineo quartz porphyry is rather prominent. In some of it the ground mass is changed to a purple color, some is in spots coated with glass from partial fusion, and much is broken into small, jagged, angular fragments defying re-assembly, although showing surfaces of the original painstaking chipping. A small percentage of well-made blades were of ordinary milky quartz but none of these remain entire. Perhaps the majority are made of a dense, unidentified rock, showing a favorable working conchoidal fracture and at present a light gray color. Some are of igneous types not easily recognized and not found heretofore, as far as I am aware, on this river. Not a single article of flint was found.

Gouges. No complete gouges were recovered but pieces of at least four individual gouges were found. As far as observable they closely resemble those from Red Paint finds, but none are of the same materials as the Red Paint types.

Celts. The remnants of at least sixteen of these tools were found in all, but with few exceptions they were too badly broken for restoration. Many of the pieces showed a rounding of the angles analogous to spheroidal weathering.

Bone Tools. So many bits of calcined bone were found, too small for identification, that little care was taken at first to save much of this material or even to examine it as closely as should have been done. Thus it is not improbable that some interesting remnants were overlooked. But when we had once happened to notice that a small fragment of bone had apparently been worked, a sharper watch was kept afterwards and pieces of bone chisels, gouges and awls were found, beside a few examples with diamond shaped points which appear to have been bone counterparts of the stone perforators.

Human Bones. As stated above, small bone fragments were numerous

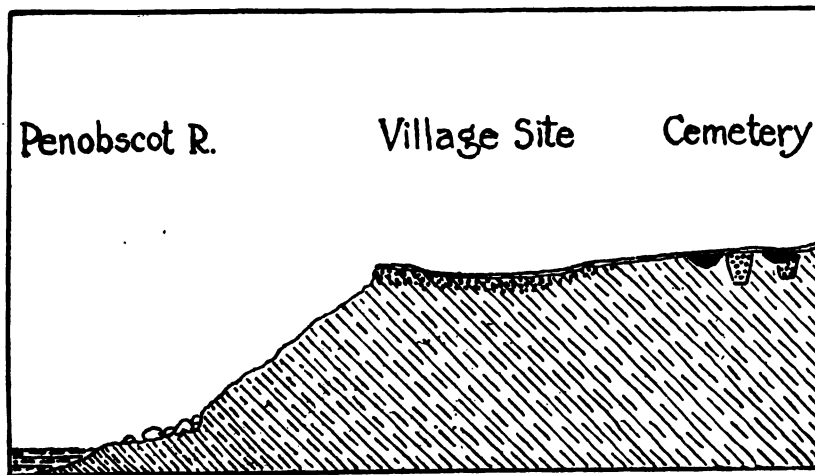


FIG. 64. Cross section of terrace on which Mr. Smith found a village site and cemetery.

They had been badly burned, crumpled easily and were hard to save. It was of course suspected that they were human. A small lot was kindly examined by Dr. William C. Mason of Bangor, who identified several as positively not human; others he said might be human but they were too small for him to be certain about them. A few rather larger pieces were found in a pit discovered later and these have recently been sent to Mr. Moorehead at Andover. He took them to Dr. Hooton of the Anthropological Section of the Peabody Museum of Harvard University, who recognized them as human and identified by name the various parts. Dr. Allen of the Museum of Comparative Anatomy concurred with the opinion of Dr. Hooton. The doctors found in the lot, in addition to the human bones, a couple of bones probably belonging to a large fish.

Thus we have fragments of human bones, animal bones, bone tools, and a surprisingly large number of stone relics, badly mixed together and mingled with the ashes of miscellaneous substances, in these fire pits, which were without doubt primarily intended as graves for human beings. If any definite arrangement of the contents of these graves was originally made, the destructive fires would necessarily have obscured it. Yet as the digging proceeded it was noticed that spear heads, arrow points, perforators, and the few scrapers occurred near the top of the deposit mixed with bone fragments, and that the stone celts and gouges were invariably found at the bottom beneath the bones.*

In the upper part of one grave close to its northern edge four small spear heads were found in contact, in parallel orientation pointing north. One was nearly perfect but the others were fire-cracked and fell to pieces upon being removed. Directly south on the opposite side of the grave, a discolored brown streak projected out and slightly upward, like the handle of a frying pan, till cut off by the top soil. Apparently four spears with wooden shafts had been placed across the grave pointing north, the grave had been covered with soil and the spaces between the spear shafts created a draught conducting smoke from the smouldering fire beneath.

RED PAINT GRAVES

Before the cremation pits were entirely worked out, Red Paint graves were discovered at a greater depth, indirectly underlying these pits but spreading out over a larger area. In all, eighteen graves containing ocher were excavated. The accompanying plan, fig. 67, and the cross section, fig. 68, show the location of graves and pits and their relation to each other.* These graves have no discernible outlines and their original size is judged

* Mr. Smith describes adzes, celts and other stone objects which are not Red Paint types. A few whole ones were found in the pits, together with many fragments of broken stone tools.

* The Red Paint graves are lettered, the cremation pits numbered.

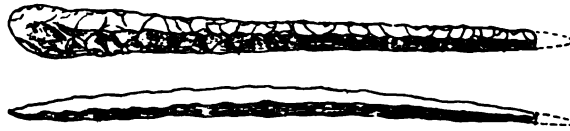


FIG. 65. Face and side view of long chipped, drill-like object. Walter B. Smith site. S. 1-2.

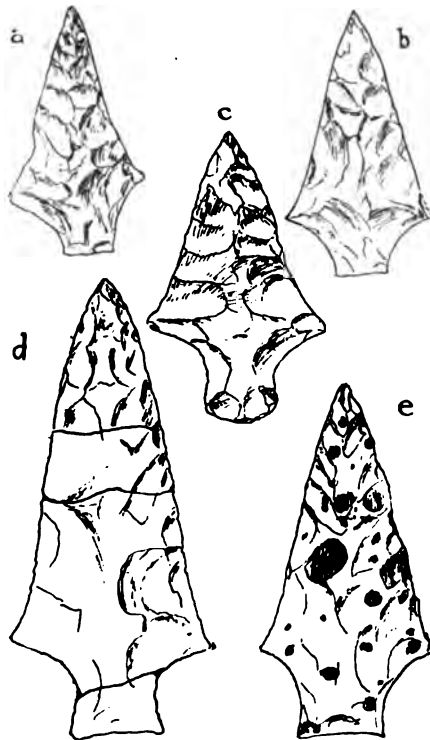


FIG. 66. Chipped, shouldered spear from the Walter B. Smith site. See pp. 136, 137. S. 1-2.

OBJECTS FOUND IN RED PAINT GRAVES 141

only by the extent of the ocher deposits and the occasional relics found just outside. The soil is a fine loamy sand near the top, with yellowish or grayish sand extending to the depth of the grave. The ocher was as a rule deposited on coarse grayish sand which gave excellent drainage. In some graves boulders were found, and in one case the red ocher had been deposited directly on top of a large boulder. The whole formation is glacial, varying in material in different parts from clay to sand, gravel and boulders.

The graves lay between eighty-five centimeters and one meter deep and the deposit of ocher at the bottom varied in different graves from about two thirds of a meter to a little more than a meter and a third in greatest diameter. All but two contained relics. No new types were found, but several kinds occurring elsewhere were absent.

OBJECTS FOUND IN RED PAINT GRAVES

Human Bones. Perhaps the most important discovery made here was the finding of small fragments of bones closely bunched and completely imbedded in a dense mass of red ocher about one meter from the surface in grave H. These also were submitted to Dr. Hooton and Dr. Allen for examination and were reported to be calcined human bones. Although none of these fragments exceed twenty-eight millimeters in length, the doctor was able to identify five of the various parts by name. The only stone relics occurring in the ocher with the bones are two chipped blades made of material closely resembling the Mt. Kineo quartz-porphry. The red ocher had a maximum thickness of 1.9 cm. and thinned out in an irregular oblong area two thirds of a meter by one meter. It was unusually firm and probably could have been removed almost as a solid cake. A small mass of limonite,* all that was left of a fire-making set, was found in the ocher near the bones.

The presence of human bones in red ocher — and these are the first to be positively identified as such — is good evidence that these places are really graves and not deposits of votive offerings. It is somewhat surprising to find the bones showing evidence of calcination, as no traces of fire are seen below the top soil in any of these graves. Therefore it seems the burning must have been done before the burial, unless it be possible that sufficient heat to produce this calcining was developed by the decomposition of pyrite fire stones.

Fire Making Outfits. A particularly interesting feature of these deposits was the care with which they had been supplied with the means for producing fire; nearly every grave contained two or three flattened ovate or clam-shaped masses of limonite — about 6 cm. to 11.2 cm. across and 4 cm. through, coated with rather loosely adhering iron-stained sand which could be for the most part easily brushed off. The majority of these objects

* Limonite or bog-ore is yellow or brown iron ore which occurs in wet places.

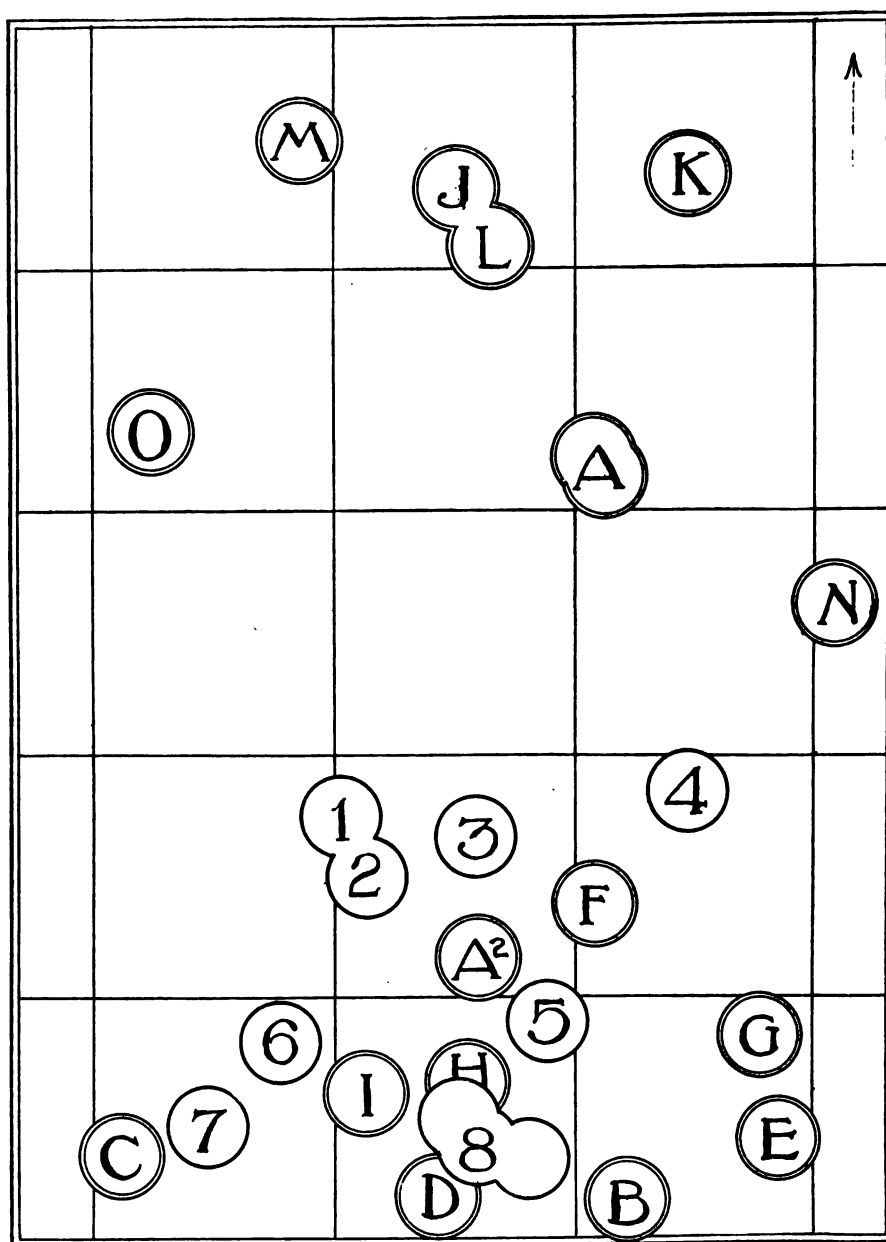


FIG. 67. Plan of graves and fire pits of the Walter B. Smith site.

are hollow and some contained yellow ocher and a greenish-colored powder. The sides of the hollow ones are thin, smooth and usually somewhat broken. In one case they had almost completely disappeared, leaving only a dough-nut shaped ring of rough limonite. These thin sides either show an impression of birch bark or are themselves fossilized birch bark — limonite pseudomorphs. An attempt has been made to show some of these in fig. 69.

The original substance of the limonite and yellow ocher may have been pyrite but in this cemetery its decomposition product resembles that of the hard, impure nodules of pyrrhotite from Katahdin Iron Works. In one instance a small hammer stone of quartz-porphyry was found firmly attached by iron rust to a small mass of limonite. It is evident that two pieces of pyrite or other hard ore or one of pyrite and one of a flint-like stone were carefully wrapped in birch bark and placed in the grave, that material for kindling a fire might be at hand when needed. This is clear proof of the Red Paint People's method of making fire, as well as of their belief in a future existence. The birch bark may have been intended for kindling or used only to protect the objects which it enclosed. The shape of some of these limonite masses suggests that the fire-making outfits may have been enclosed in large clam or scallop shells.

It seems certain that articles other than stone were at least in some cases placed in this red paint — perishable objects that now show only as rounded sections and long streaks without sharp boundaries or definite shapes, and observable only by the contrast in color between their ashes and the red ocher. A microscopical examination of this gray dust or ash revealed in several instances a few minute scales of charcoal. This indicates that the articles buried may have been fire-smoothed shapes of wood and their rod-like shapes and half-round sections suggest bows, arrowshafts and spear handles. But these dust forms are but gray ghosts of the original objects and are far too intangible for identification.

RED PAINT PEOPLE AND ALGONKINS

Various theories have been advanced as to the identity of the Red Paint People. The most obvious question is, naturally, whether they were the same people as the Indians who inhabited New England at the time Europeans first came here and whose descendants still survive, namely the Algonkins. For light on this point we should make some comparisons between the Algonkin types of artifacts common on the village sites and in the shell heaps of Maine and the rest of New England, and the contents of the Red Paint graves.

Up to the present time not a single piece of pottery nor any grooved axe, no tablet-shaped ornament, stone pipe, bone or shell ornament, scraper, grooved hammer or thick, oval celt, has been found in any of their graves. These contain more spear points than arrow points and the slate points are

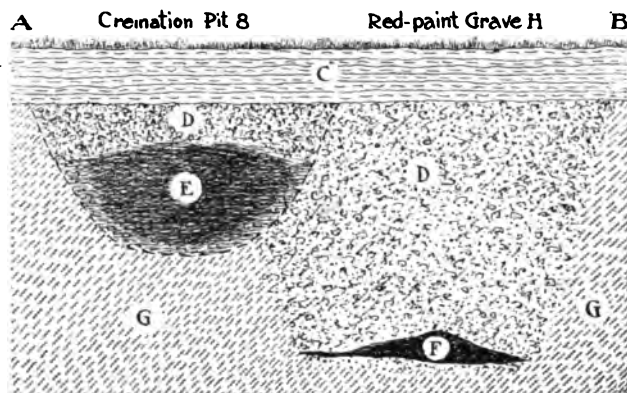


FIG. 68. Vertical cross section A, B, through Cremation Pit 8 and Red-paint Grave H. C. Cultivated soil. D, D. Disturbed sand. E. Lampblack-like mass with many fire-broken relics and calcined bone-fragments. F. Red ochre with a few relics. G, G. Undisturbed sand.

No definite outlines for any of the red paint burials could be determined but an occasional flint chip or a bit of charcoal and patches of darker colored sand were sufficient evidence of soil disturbance without the conclusive proof furnished by large quantities of red ochre with stone relics found at the bottoms of the graves. The cremation pits-dug much later-showed well-defined boundaries and the disturbed soil was somewhat darker colored throughout than that of the red-paint graves.

common, whereas on ordinary village sites they are absent or very rare, and I do not know of one being found in a shell heap. Chipped knives are also very rare. A comparison of the gouges and adze blades with those of known Algonkin manufacture indicates that they are not made by the same people.

The writer agrees with the opinion expressed by Mr. Willoughby and Professor Bates, who visited Emerson's cemetery during the course of our explorations, to the effect that the grooved axe was introduced from the west; being found serviceable there it probably came into New England somewhat later. On the other hand the celt-gouge and double gouge forms of the Red Paint People were not used by the western aborigines, at least not in the Mississippi valley. That the Red Paint People did not copy the grooved axe and that their own most characteristic forms were unknown to other American Indians, together with the evident great antiquity of their culture seems to justify the inference that it existed before the general Algonkian development, although no such argument should be considered conclusive, in the light of our present knowledge.

MODERN INDIAN BURIAL AT SARGENTVILLE

It has been claimed by some that the prehistoric graves we have opened in so many places are identical with modern Indian interments. These statements are not made by those who have actually excavated in Maine, but by persons not familiar with Maine archaeology. In view of a recent publication of the Bureau of Ethnology*, the following detailed study of a modern burial is presented. Readers are requested to compare this grave with those of the Red Paint People previously described.

In 1912 some members of our expedition went to Sargentville in the town of Sedgwick and explored the shores of Walker's pond. Test pits were sunk on a knoll and an upland slope in the field of Mr. Hugh Brown, on the west shore of the pond. These revealed nothing. A search of such beach as lay bare yielded a few Kineo felsite chips. The supposed large camp site was said to be at the northern end of the pond, in Brooksville. On July 9th pits were sunk on a knoll twenty meters from the lake on the land of Mr. Grindel. The place is called "the Indian burying ground." On the very top of this knoll, in dry, stony soil, were found the remains of a single skeleton, accompanied by copper and shell beads. Only such bones were left as were preserved by the copper. Of the skull, only the lower jaw and teeth remained. At the neck were found two rolled copper cylinders about eight centimeters long, still strung together on a piece of thong. The remains of a third cylinder were also found. Resting upon what had been the chest of the body was a rectangular copper plate, about twenty-two by five centimeters, containing three small, irregular perforations along the middle line. Be-

* Bulletin 71, "Native Cemeteries and Forms of Burial East of the Mississippi," Washington, 1920, by D. I. Bushnell, Jr.

LEGEND



VILLAGE SITE



CEMETERY



R.P. RED PAINT CEMETERY



SHELL HEAR

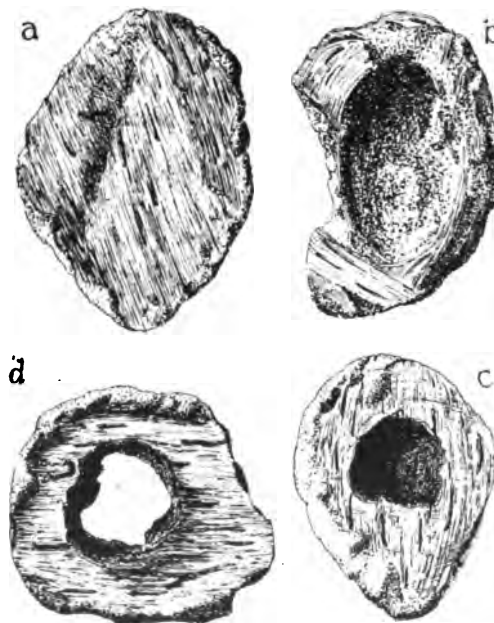
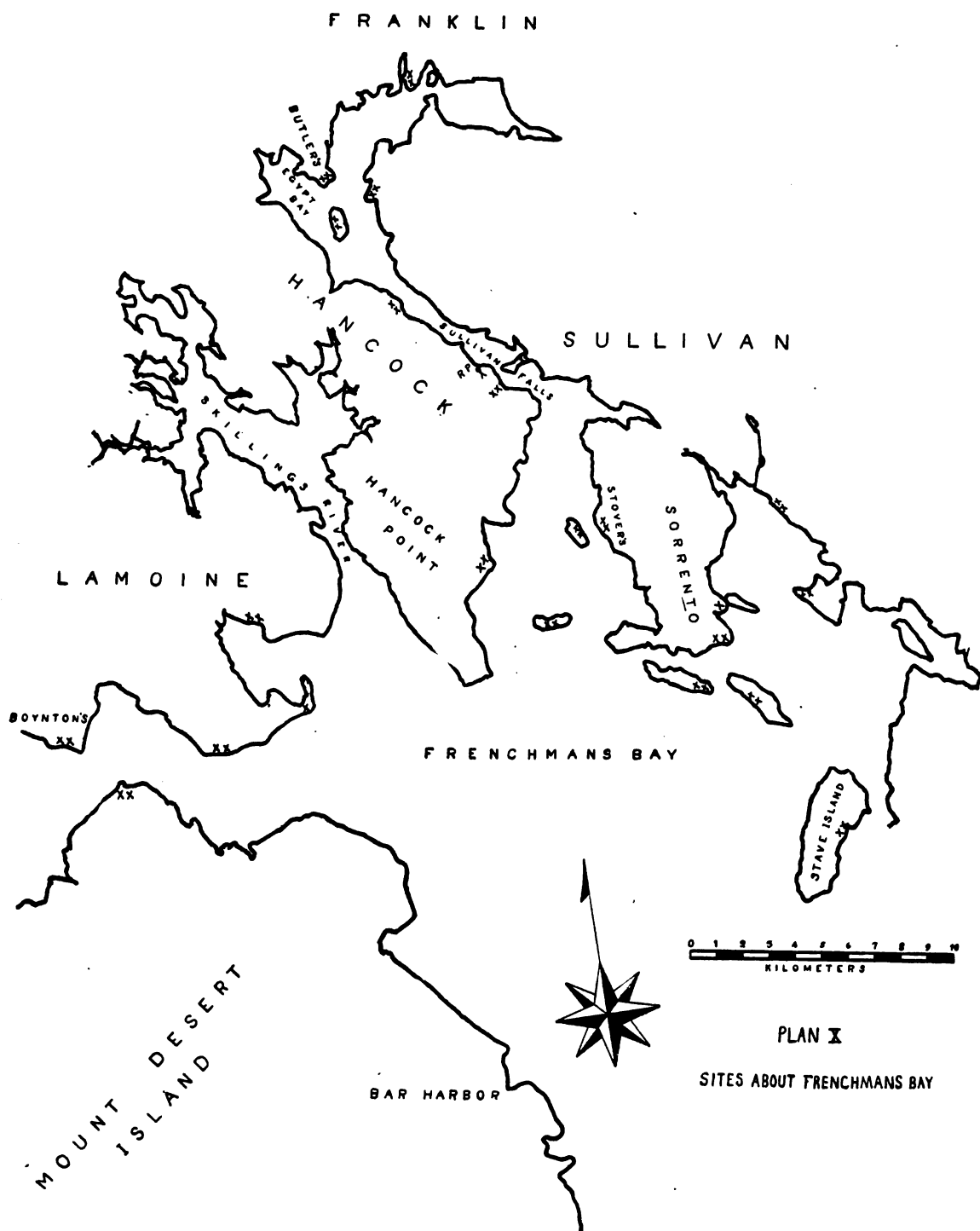


Fig. 69 Parts of prehistoric fire-making outfits. Limonite nodules pseudomorph after pyrite with fossil birch bark coverings.



0 1 2 3 4 5 6 7 8 9 km
KILOMETERS

PLAN X
SITES ABOUT FRENCHMANS BAY

neath this was a well-preserved sheet of hide, of leathery texture. Upon this being carefully removed, a layer of white and black shell beads, still in order, was disclosed. They consisted of one long string and many shorter ones at right angles to this. These all rested upon another fold of hide. About them occurred shreds and lumps of bark or matting. Five or six of the cervical vertebrae, all stained green, were preserved. Some of the smaller ribs were likewise preserved. Apparently some copper object had rested under the body, as several splinters of copper were wedged among the vertebrae. Parts of the scapella and humerus remained. The white beads were comparatively thick and probably of clam shell (*venus mercenaria*?) while the black or more properly purple beads were very thin and were sometimes strung double. A number of loose beads were found, and all the earth coming from the grave was sifted through the fingers before being thrown aside. In working out the grave beyond where the objects occurred it was sometimes possible to trace discolorations in the clayey soil, marking the decay of the larger bones or of the bark or matting wrapping. No stone objects were found with this burial, nor any trace whatever of other metal than copper. The body was about thirty-three centimeters below the surface, and as nearly as could be determined lay north and south at full length and with the head to the south, and the bones were those of a young person. Subsequent pitting on this knoll and adjacent areas revealed nothing further. An analysis of the copper proves it to be European rather than native American, as is shown by the following statement contained in a letter from Professor C. H. White of the Mining School of Harvard University.

Cambridge, Massachusetts, July 14, 1913

Dear Mr. Manning: —

At last I have as nearly completed the analysis of the copper you gave me from the Indian grave in Maine, as the size of the sample will permit. I find the following percentages of metals present:

Copper.....	95.89
Tin.....	0.38
Lead.....	0.55
Iron.....	0.14

The metal also contains arsenic and antimony, but I was not able to determine the amounts of these metals, owing to the small sample that I had to work upon. On account of the corroded condition of the metal I found it impossible to obtain a sample absolutely free from oxides.

* * * * *

I am sorry not to be able to report the arsenic and antimony; but the results that I have been able to obtain will probably enable you to determine the origin of the metal.

Yours very sincerely,

(Signed) CHARLES H. WHITE



Fig. 70. The four forms of plummets found in the Red Paint People graves. S. 3-4.

Dr. R. B. Orr, Director, Provincial Museum, Canada, in a letter dated August 11, 1921, called my attention to the discovery of seven or eight skeletons on the north shore of Lake Ontario, immediately west of the city of Toronto. The burials were accompanied by a quantity of red ocher, apparently soft hematite but not very brilliant.

In the State University Museum at Columbus, Ohio, I was shown some bones colored brilliant red by contact with powdered hematite. These were found in a gravel knoll, or glacial kame burial. Clarence B. Moore, Esq., has reported quantities of powdered hematite found with skeletons in one of the mounds explored by him. In all these instances the powdered hematite was present, but the eight well known Red Paint People types are absent — as they are everywhere save where the Red Paint culture area extends in Maine.

Although both Mr. Willoughby and myself have called attention to the fallacy of Mr. Bushnell's argument to the effect that all burials containing powdered hematite are practically the same culture, yet according to this latest publication, he* seems to persist, notwithstanding the evidence of several hundred graves to the contrary.

THE RED PAINT PEOPLE AND THE SHELL HEAPS

One feels safe in suggesting that the Red Paint People did not live at the shell heaps or at least that they did not accumulate shell heaps. It is perhaps impossible to prove this statement absolutely, as it is impossible to prove many other generally accepted statements in American archaeology; but it is an opinion based upon many months of work among the shell heaps along the Maine coast. In the heaps themselves no broken slate spears, unfinished gouges, crescents, or other forms included under the list of persistent types are found, with the sole exception of some rude plummets, but plummets occur everywhere, as is well known. I do not affirm that the Red Paint People did not visit the coast, but only that no village of theirs upon the coast has been identified. They have left few of any of their characteristic objects on the surface near salt water, although curiously enough there are five known cemeteries on shores facing salt water. One would naturally suppose that they would occasionally lose an adze or hatchet blade, part of a slate spear, a chunk of iron pyrites, a crescent, a long pendant, or some other object, in places where they were living. We find none of these things in the shell heaps, although we have hand-trowelled an area equal to hundreds of square meters; but on the contrary we discover great quantities of broken pottery and bone implements, hammer stones, etc., of which the Red Paint People made no use, so far as can be determined.

* "Native Cemeteries and Forms of Burial East of the Mississippi." Bureau of American Ethnology, Bul. 71, p. 15.

In the *American Anthropologist* for 1915,* Mr. Willoughby published a paper on the Red Paint People, in reply to a recent contention of Mr. David I. Bushnell of the Bureau of American Ethnology, that there was no especial difference between the Red Paint culture and that of other Indians.** In this paper he refers particularly to the adze blade, a subject in which he is much interested and upon which he has already presented a paper in the same journal.† Readers will find these two papers of use when seeking knowledge concerning the use of stone artifacts by New England Indians. In the concluding sentence of the later paper, the author, always conservative, says: "A careful study of available data seems to indicate that they [the Red Paint People] were not contemporary with the Algonkian tribes whose refuse piles form most of the shell heaps along the New England coast."

We may add that, were they of the "shell-heap culture," they certainly would have placed some of the characteristic shell-heap tools in at least a few of the four hundred and forty graves that we have explored. The utter absence of forms common to Indian graves elsewhere in the United States is characteristic of the graves. This is our strongest evidence that they are not to be classed with Iroquoian or Algonkian, and brings us to our final observation, that the Red Paint People lived before the construction of shell heaps and before the Algonkian development in Maine.

THE BEOTHUK THEORY.

In 1915 the University Press of Cambridge, England, published a large volume by James P. Howley, Esq. entitled "The Beothuks, or Red Indians, the Aboriginal Inhabitants of Newfoundland." This scholarly work was hailed by some as presenting a solution of the Red Paint People problem. The writer of this report has made a careful comparison between the objects taken from Red Paint graves by our surveys and those illustrated by Howley at the end of his volume. He presents a large number of bone implements, many of which are worked into fanciful designs similar to some found in the Iroquois graves of the Mohawk Valley, but the stone gouges, hatchet blades, spear and arrow points and chipped objects bear little resemblance to the types found in Maine. There are no long, slender spears or daggers, none of the crescents or little effigies such as are found in the Red Paint graves; and above all, the red paint is missing from their burials.

If the Beothuks and the Red Paint People are one and the same, there is little indication of the identity in a cultural similarity. It is the opinion of the writer that the Red Indians of Newfoundland are not descendants of the people to whom we have devoted so much space in this book. It seems incredible that they should have so changed their art in travelling so short

* Vol. XV11, pp. 406-409.

** Op. cit. Vol. XVII, pp. 207-209.

† Op. cit. Vol. IX, 1907, pp. 296-306.

a distance as from Maine to Newfoundland. The literature on this subject is not extensive, however, as no field work has been projected by other institutions than Phillips Academy.

The conclusion to be drawn from all these comparisons seems clearly to be that the Red Paint People did not merge with any other known culture to the east, the west, the north, or the south; that they are absolutely distinct and very ancient. Whether, as has been suggested, we might find a change or a merging into another culture in Nova Scotia, cannot be fully determined until explorations are carried into that quarter.

If there is a similarity to be noted with the culture of any tribe known to history, it would perhaps be with the Eskimo. Some implements in use among this people suggest Red Paint influence. Hence if the writer were to theorize at all upon the question of what became of the Red Paint People, he would offer the suggestion that they moved northward and later became the Eskimo.

As to the antiquity of these people stated in years, no one is able to set even approximate dates. In comparison with aboriginal interments in more than twenty other states where the author has explored, they appear very old. They have begun to fit into their geologic surroundings and do not appear modern in any sense of the word. No other graves have just such an appearance.

PART III.

THE SHELL HEAPS OF MAINE

A. EXPLORATIONS

During the last twenty or thirty years a number of pamphlets and articles in scientific periodicals have been devoted to the shell heaps of the upper Atlantic coast, among which those at Damariscotta, Maine, are especially noted.* It is not surprising that such remains should receive more attention from observers than interior village sites or Red Paint cemeteries, for they are usually visible from the water and persons voyaging along the coast often land and examine them.

Maine shell heaps are usually composed of clam shells with an admixture of mussel shells. Clams predominate and mussels seem only to have been eaten when the natives were short of other food. The heaps range in size from those four or five meters broad, such as mark the site of a wigwam for a few seasons, to the great oyster shell heaps at Damariscotta, some of which are a hundred meters or more in length and even at this late day over seven meters high. They are always near a good clam-flat, never upon a bold, rocky shore. Often they occupy a long point, occasionally a sheltered cove, and sometimes they are just back from a straight shore-line. They are seldom located more than five meters above high tide. The surface has often been plowed and used for raising crops, as the buried shells make a wonderfully rich and productive soil.

Our surveys examined some of these heaps during the years that we were along the coast hunting for village sites and cemeteries. In 1912 none were excavated, but in succeeding years many were inspected and explored, our most extensive work being done in Frenchman's Bay in 1913 and at Castine in 1915.

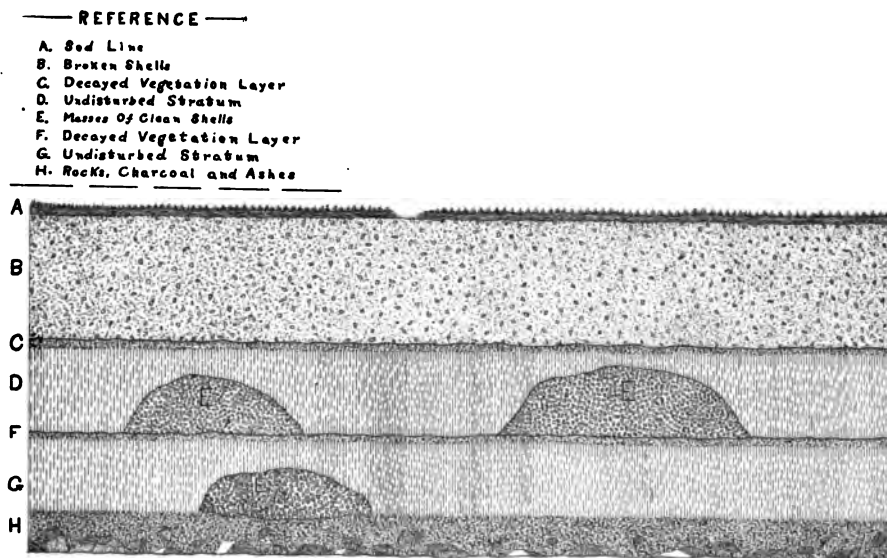
No one knows the exact number of these accumulations of shell, which are scattered all along the Maine coast from the New Hampshire line to Calais. Professor Bates located many of them upon his maps and we were permitted to copy these entries upon our own maps. The total thus known is something like two hundred and fifty.** Careful work about the shores of every inlet, bay and island along the coast would add at least three hundred

* See Bibliography under Cushing, Putnam, Morse, Loomis, and Young.

** About 60 by Bates; 190 by Phillips Academy. Professor Bates had other maps, it is said, but these are not available at present. Our maps do not show heaps less than 20 meters in diameter and 6 cm. to 8 cm. thick.



FIG. 71. The men at work trenching the Calf Island shell heap. See p. 158.



CROSS SECTION OF BOYNTON'S SHELL
HEAP, LAMOINE, MAINE.

FIG. 72.

more, as those who are familiar with the Maine ocean border contend. Much of the coast line has not been intensively worked, for the reason that, large as were our parties, we did not have time to cover all of this great region, especially as we were primarily searching for cemeteries and village sites. Shell heaps are very much alike, and when one has examined thirty or forty of them and found little or no difference in the culture of the makers, he turns his researches in other directions. A part of our crew was usually kept on shell-heap work while others searched for cemeteries. In the lower layers of the heavier heaps there is much fine black earth and soot which seems to have a bad effect upon the hands, cracking the skin and causing sores if the men continue hand-trowelling for more than two weeks together. We therefore changed frequently from this to the other form of exploration in order to rest the men.

In most heaps we find many pits a half meter to several meters in extent, which have been dug by seekers after bone and stone objects. It has invariably been our custom to fill up our own excavations, but irresponsible persons leave theirs open. Owners complain that, as those who dig undermine the banks, high tides wash away the land thus exposed and damage results. One advantage, however, accrues to the thorough worker from this "pot-hunting", for the unfilled pits indicate to him how much work has already been done and whether enough of the heap remains to justify proper explorations.

In all the shell accumulations, village sites, or kitchen middens examined by our party at any time, neither regularity of form of the heap itself nor intelligent, orderly disposition of objects was to be observed. To make an intelligible map of any shell heap would be impossible, and the same is true of any series of measurements. It is sufficient to say that the heap is so long and of such depth and breadth. The specimens of stone, bone, clay, and chert are scattered all through the mass. They may lie near the surface or be at the bottom, but fewer are found near the top of the heap. Plowing or any disturbance would cause the heavier objects to settle, since the upper shells are loosely packed. The artifacts lie among the shells, in black earth, in ashes, or wedged between rocks, or at the very base.

FRENCHMAN'S BAY

In July, 1913, after our work upon the Red Paint cemetery on Parker's Point, Blue Hill, we located at Hancock Point, opposite Bar Harbor. This region lies at the heart of the shell-heap culture, although it includes also the Sullivan Falls cemetery of the Red Paint People, upon which we spent part of our time.* We dug out several small heaps near our base, collecting vari-

* There are more than sixty shell heaps, large and small, within twenty kilometers of Mount Desert Ferry.



FIG. 73. Above, point on which Boynton's shell heap is located. Mt. Desert in the distance. Below, trenches at Boynton's shell heap the second day. These were later made into one large pit or excavation.

ous implements of the forms common in shell heaps, and as we had volunteers, we were able to work out many meters of earth and shells in a single day.

The shell heaps in this region are almost entirely composed of clam valves. A few larger quahog, mussel and scallop shells are to be seen, but clams are at least ninety-seven percent of the whole. The clams appear to have been roasted on hot stones. Great numbers of stones from ten to twenty-five centimeters in diameter, blackened or burnt red, occur in all the heaps. The shells themselves often exhibit traces of fire and are some times even charred, but they are clean and clear when no burnt stones or charcoal are near. All the heaps contain larger clams than the average dug up by modern clam hunters.

Sullivan Falls Shell Heap. Two hundred meters below the Sullivan Falls cemetery, on a point of land just opposite the clam flat, is a heap measuring about thirty-five meters north and south by forty meters east and west. It is marked B on plan VII. Our excavations here were extensive for the reason that it lay so near the Red Paint cemetery and we hoped to learn something new — possibly that the Red Paint People had lived on this site. We dug out practically the whole of it, but except three plummets in the bottom layer, nothing was found different from the forms of shell-heap artifacts elsewhere. The list of finds is:

Plummets	3
Broken and whole arrow heads	24
Spear heads	4
Hammer stones	3
Unfinished implements	47
Bones	7 boxes
Scrapers	5
Rubbing stones	3
Knives	2
Celts	8
Worked antler	1
Pottery	3 boxes
Awls	6
Perforated shell	1
Broken gouge	1
Drilled bear teeth	2
Broken objects	40
Worked bones	2
Chips	5 boxes
Total	167



FIG. 74. The mass of shells at Boynton's. The central part of this picture is about one half meter from the surface.



FIG. 75. Teeth of moose, bear, panther, wolf, lynx, and beaver from Stover's, Sullivan Falls, Wardwell's and Butler's sites. S. 2-5.

The less important shell heaps which we examined may be mentioned briefly as follows:

One kilometer north of Sullivan Falls on the west side of the channel is a heap which we dug out rather thoroughly. It measures 25 m. by 15 m. and is 30 cm. to 40 cm. thick. Little was found. Several others were still further up toward the north west, near Egypt Bay. On the south end of Burying Island, four kilometers above the Falls, is a long heap following the outline of a cove, in which we made partial excavations. It is 100 m. long in a semi-circle, 10 m. to 15 m. wide, and 20 cm. to 60 cm. deep. On Butler's Point, one and a half kilometers north of Burying Island, is a heap 100 m. long from east to west, 15 m. to 20 m. wide, and 30 cm. to 1 m. in depth which is rich in bone objects. We excavated extensively but could not complete the work, as the owner decided to retain the place for "summer guests" to explore. Sufficient information was secured, however, to indicate that it is an important site. We recovered 533 objects in three days, of which 147 were bone tools.

Some interesting specimens were secured by digging in a shell heap belonging to Mr. Wardwell, on the shore near Mount Desert Ferry, between Sullivan Falls and Hancock Point. Ingalls Island, opposite Mount Desert Ferry, has shell heaps at both north and south ends, which are about 30 m. long, 10 m. to 20 m. wide, and 30 cm. to 60 cm. deep. They had been greatly disturbed by relic hunters and our force did not do much digging. On Bean's Island, two kilometers south of the Ferry, are two heaps. A small one at the east end, 20 m. by 10 m. and 40 cm. deep, was excavated in part. Near the west end is one which extends along the south shore for 30 m. and back from the shore 10 m., and is 15 cm. to 35 cm. deep. This was well excavated. The shell heaps in this region contain very few mussel or scallop shells, whereas near Castine there is a considerable proportion of shells other than those of clams.

Calf Island Shell Heap. While we were in the Mount Desert region, Dr. Peabody joined us for some time and he proposed that some one shell heap should be carefully hand-trowelled out in order to ascertain all possible facts. Although shell heaps are refuse piles, quite different from cemeteries and not much more could be learned from intensive digging than by means of the larger tools, yet he thought that the experiment should be tried. Accordingly most of the crew of twelve men were assigned to him and he put them to work on Calf Island, at the entrance of Frenchman's Bay, which belongs to Colonel Morrell of Philadelphia. They excavated from the center outward until the "feather edge" was reached and nothing more was to be found. Fig. 71 presents the crew at work trenching the heap.

Dr. Peabody's notes are here inserted:

"On August 22, 1913, excavations were started on Calf Island, Frenchman's Bay. Trenches were excavated as follows, beginning on the

bluff of the south shore at a point about midway between the east end of the island and the rise of ground in front of the house of the owner of the island, Colonel Morrell, of Philadelphia.

Trench A — 8 meters north and south, 4 meters east and west.

Trench B — 6 meters north and south, 6 meters east and west.

(Trench B lay 2 meters west of trench A.)

Trench C — 6 meters west-south-west and east-north-east, 2 meters north-north-west, and south-south-east.

(Trench C lay 7 meters to the east of trench A.)

Trench D — 4 meters north and south, 3 meters east and west.

(Trench D lay 17 meters east of the east end of trench C.)

Trench E — 6 meters north and south, about the same east and west.

(Trench E lay 10 meters west of trench B.)

Trench F — 4 meters north and south, 4 meters east and west.

(Trench F lay 1 meter 50 cm. north of trench A.)

Trench G — 3 meters north-east and south-west, 1 meter 50 cm. north-west and south-east.

(Trench G lay 1 meter 50 cm. east of the north-east corner of trench A.)

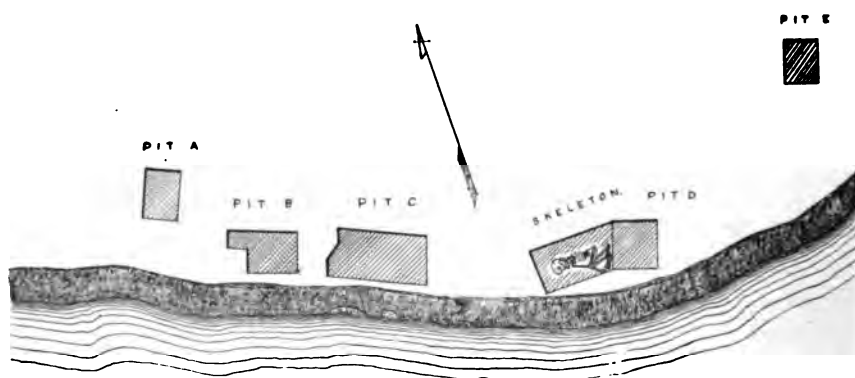
“The entire shell heap has a length of 67 meters with a maximum breadth of 31 meters. The depth of shells varies from a few centimeters to 40 cm.; the amount seems to depend on the original inequalities of the surface. There was little evidence of stratification.

“As a result of the excavations the following specimens were collected:

Projectile points	2
Broken projectile points	1
Scrapers, red jasper	2
Scrapers, white quartz	4
Scrapers, dark chert	1
Scrapers, unfinished	1
Projectile points or rejects or unfinished points	10
Perforator (?)	1
Grooved axe 20 cm. x 11 cm. x 6 cm.	1
“Turtlebacks”	2
Celts, thick	3
Celts, thin	3
Adzes, broken or unfinished	2
Nuclei	7
Chips	240
Chips, red jasper	6
Chips, quartz	5



FIG. 76. Wheeler's Cove shell heap, near Castine. Before exploration. Less than a third appears in the picture.

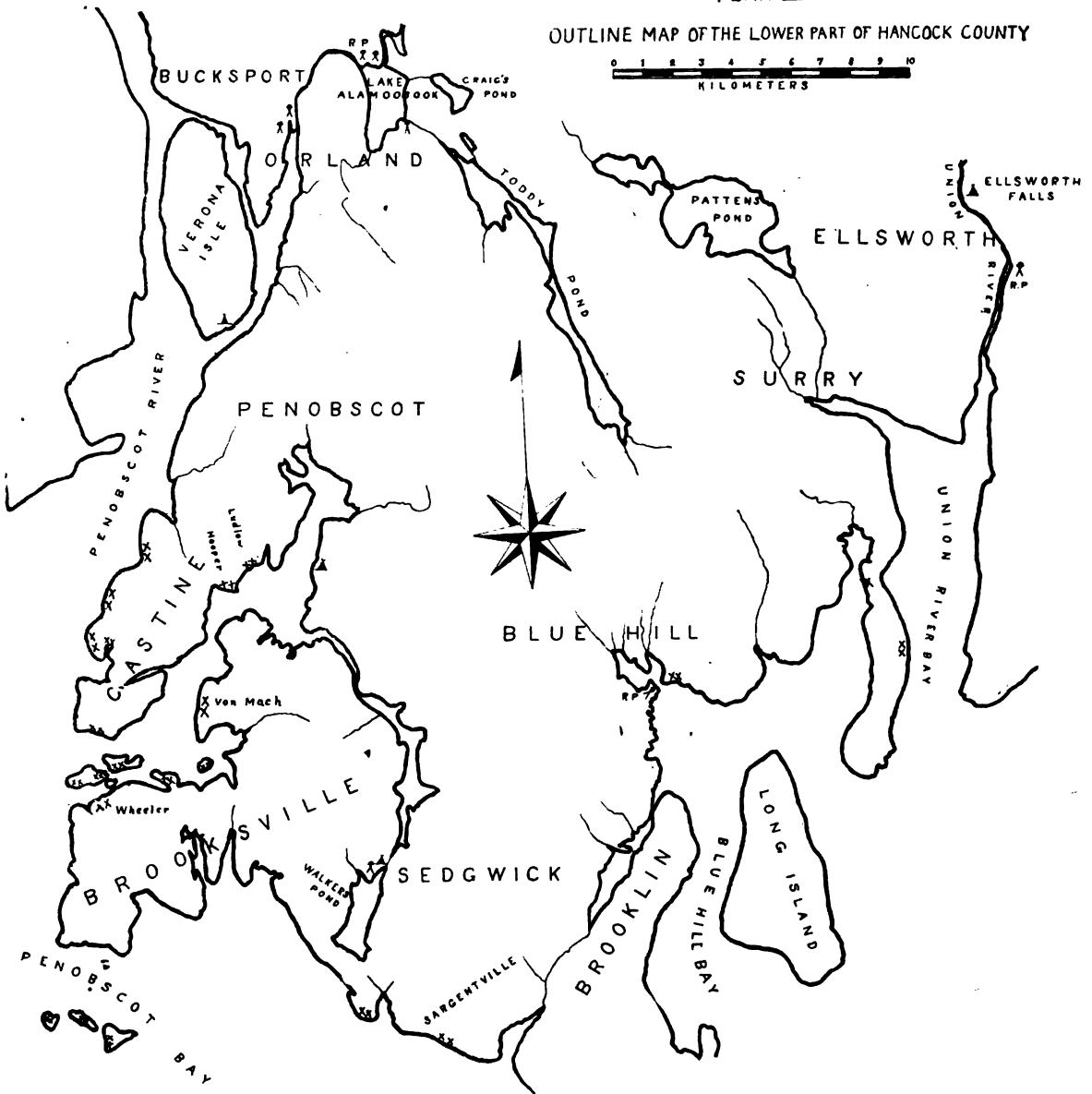


EXCAVATIONS IN WHEELER'S SHELL HEAP, NEAR CASTINE.

FIG. 77.

PLAN XI

OUTLINE MAP OF THE LOWER PART OF HANCOCK COUNTY



Hammer stones	14
Fragment of "mill"	1
Iron "handle"	1 (On surface)
Bone points and fragments, flat	3
Bone points and fragments, round	11
Bone fish hooks and fragments	12
Bone harpoons	8
Pottery fragments	
(largest 6 cm. x 5 cm. x 5 mm.)	122
<hr/>	
Total	463

"Animal bones were found representing the following species: moose (very numerous), bobcat, Indian dog, beaver, otter, grey seal, birds, and shells of the razor clam. These identifications were made by Dr. Glover M. Allen of Harvard University, who kindly examined all the shell-heap materials."

It was not known at the time that Professor Loomis and Mr. Young of Amherst had previously explored a part of Calf Island heap. In their report in the *American Journal of Science** they list fifty-eight implements of various kinds and bones of thirty-nine birds, animals and fish, which should be added to Dr. Peabody's total. The heap had been considerably disturbed by excavators and also plowed over a number of times; hence many objects had doubtless been carried away by previous visitors.

Stover's Shell Heap. Near Sorrento, on the east side of Frenchman's Bay opposite Hancock Point, is a shell heap on the estate of Mrs. Louise Stover. It lies nearly north and south along the shore for 82 meters and varies from 10 to 12 meters in width. Three or four meters of the width have been washed away by the tides. The depth was from a quarter of a meter to one meter.

The site had not been disturbed by previous investigation, but we excavated only about half of the heap, as the ocean was undermining the bank and the owner did not wish it dug down. There were no strata or periods of occupancy to be observed, all indications pointing to a gradual and steady accumulation of the material. Human relics were numerous but there were no indications of a knowledge of European culture. Flint implements predominated over bone tools.

In the bottom layer the shells were decayed and there was very much black, soft earth, from a deposit of ashes and charcoal, with stones twenty to fifty centimeters in diameter which showed blackening by fire. Some two hundred objects of interest were recovered, including harpoons, a pipe, an effigy, fish hooks, etc. The position of the objects was the same as elsewhere.

* Vol. XXXIV, July, 1912, pp. 17-42.

Many were found about the large hearths or between fire stones in the base as if lost. As it is not likely that good fish hooks, awls, and chipped objects would be thrown away, it seems that the more perfect forms must have been accidentally dropped.

A complete catalogue of the objects found in Stover's shell heap includes more than nine hundred numbers.

Boynton's Shell Heap. We examined many other shell heaps on the islands in Frenchman's Bay and Skillings River and cruised about the region seeking a large, undisturbed, deep shell heap, in order that we might make original and more thorough observations. We found one at last at Old Point in the town of Lamoine, not far from the coaling station of the Navy and overlooking the long bridge of the Ellsworth-Bar Harbor road. It was owned by Mr. Nathan Boynton, who kindly permitted extensive excavations.

This proved to be the largest occupied site that we discovered during our eight seasons in Maine. It lies on the east side of a long, narrow point jutting out southward into an arm of the sea, with a large clam flat both to the right and to the left. The Indian village which it represents was located near the outer end of the point and extended back toward the main land for three hundred meters, with a width of about one hundred and fifty meters.

After test pits had been sunk and indications showed that the heap was one meter and a half at its greatest depth, we investigated further to the north and found shells three to ten centimeters deep, more than two hundred meters distant from the thickest part. While the shells are heavily deposited over the area cited, they are also scattered thinly along the adjacent land, and chips of felsite, arrow heads, etc. occur in the neighborhood. Probably the village extended beyond the actual shell-heap layer and our estimate of three hundred meters does not cover the entire site.

Boynton's was one of the largest shell heaps ever worked out in detail, and the richness of the site in objects and its undisturbed state enabled us to make some observations of value. We did not excavate areas where the deposit of shells was less than forty centimeters in thickness, and some spaces along the ocean front were left at the owner's request, but for practical purposes it was all explored.

It was evidently a place of residence for a considerable length of time. There was space for at least forty wigwams, possibly sixty, and the place was so situated that it could easily be defended against attack. A careful estimate of the number of clams in the Boynton heap is impossible, but we did some measuring and computing, taking into account the space occupied by broken shells, and our observations enabled us to estimate roughly that the heap contained some seven million double shells, not halves. As the clams are very large, fourteen would be ample for a meal for one person. Thus Boynton's heap would represent half a million meals. The shells are

much decayed, and often nothing remains but the hinges. A comparison between modern "clam factory" heaps and the prehistoric accumulation was made by our party, and it was not difficult to distinguish one from the other, the modern remains being clean, fresh shells, with no debris.

The field notes state:

"Thursday, Aug. 28th, we took out 307 objects. Friday we found 224. We were in the richest part of the heap. Up to Monday evening, September 1st, we had dug a trench 48 meters long N. E. and S. W. besides many smaller pits. . . . The hand-trowel work shows two and possibly three periods of occupancy. All indications point to a permanent camp and show that the site was in use for a long time. At the bottom we find an irregular surface — depressions, elevations, boulders, etc. The shells left by man filled up these depressions and thus a uniform surface was obtained."

This condition accounts for the shells occurring in pockets, in sunken places, and at various depths. In a few spots they were only half a meter deep, but usually three fourths of a meter to a meter and a half. Again, there were places in which the deposit was nearly uniform for two or three or even five meters.

The top layer of shells is badly broken down to plow line, about twenty-five to thirty centimeters. These upper shells, although broken into very small fragments, are fairly firm in substance. Those lower down are more decayed, either from the action of water or from the earth in which they lie.

Most of the bone tools lie near the bottom, few if any being near the grass roots. A very few are twenty to thirty centimeters down, but they usually begin to occur at forty-five to fifty centimeters and are most numerous seventy to one hundred and twenty centimeters. They lie for the most part in thick, dark, almost black soil, at the base of the shells. My opinion is that they have sifted down through the loose shells to the lower levels. Bone implements near the surface would be turned up in plowing and soon decay when separated from the ashes. Felsite arrow and spear points are, however, common in the top layer.

In the second or central layer (see fig. 74) the shells are often loose — pure shells without much earth and not badly broken. They are brittle and can often be crushed in the hand. These shells lie for the most part in pockets one to three meters in width, and it seems as if a number of natives had at this particular place opened several bushels of clams. Few bones occur in this middle layer. As the shells are loose and must have been so when first deposited, it is likely that any heavier object dropped among them would gradually settle to the bottom.

Figure 72 shows an average section of Boynton's where the accumulation is one to one and a third meters in depth, and might represent almost any part of the heap area. It clearly shows two and possibly three periods of

occupation. In layers D and G the shells are generally distributed but the artist has shown only deposits of clean shells. In many places and at various depths in Boynton's heap, great masses of clean, nearly perfect shells appear. It would seem that these clams were boiled or steamed and the shells thrown down in a heap together. More usually the shells are blackened as if the clams had been roasted on stones or in hot ashes. The deposits of clean shells, one to two meters in diameter, are free from artifacts, these objects being found where shells, earth, and charcoal are intermingled. The larger percentage of objects comes from around the large stones and muck deposits in the bottom layer or on the base of the heap, which is the original surface of the ground.

Bone, clay, and stone objects were very numerous at Boynton's. We secured about five thousand in 1913, and when, after the Susquehanna expedition of 1916, Mr. Heye* of New York employed our Maine crew to excavate the heap further, they recovered about twenty-two hundred additional specimens. Many others must have been washed away by tides and lost, for Mr. Boynton claims that his "point" has narrowed at least six or eight meters. The grand total of objects in the heap we cannot estimate, but the number of seventy-two hundred catalogued in the two museums indicates the importance of this place to the Indians. We need not repeat the whole list, but these are a few of the more important groupings: Human bones (scattered) 8. Bone arrow points, awls, fish hooks, etc., 1568. Worked bones 221. Harpoons and similar objects, 81. Chipped stone knives, 45. Arrow and spear heads, 197. Rough celts or hatchets, 93. Pottery fragments over 1500. In addition there were fragments of birch bark, a copper fragment, a rough slate knife, part of a stone pipe, a bit of worked hematite, and one small pendant. This is just our collection.

Pottery is common at Butler's, Boynton's and Stover's shell heaps but rare elsewhere. Some fragments were found at Sullivan Falls and Ingalls Island, but no quantities except at the places named.

Scattered throughout the heap are the bones of large and small animals, birds and fish. The bones are so often grouped by threes, sixes or more, that we concluded that the parts of one animal had been eaten and the bones thrown down on the same spot. The bones occur at various depths but usually more than thirty centimeters from the surface. They are frequently associated with charcoal or burnt stones.

Of the great quantities of animal bones found in this heap, several bushels were sent to Dr. Allen for examination. He identified the grey seal (*halichhoerus*) as distinguished from the harbor seal, the prehistoric Indian dog, of which there were many bones including skulls, and the large mink. The bones of these three animals, the large mink, the grey seal and the In-

* Mr. George G. Heye of the Museum of the American Indian.

dian dog, were nearly all found in the lower layers of Boynton's and other shell heaps. Dr. Allen states that these three species have been extinct for some time. In addition to the list of mammals already identified from the Calf Island shell heap, he found large numbers of wolf, deer, lynx, raccoon, and muskrat bones. Of the birds, the cormorant, eagle, duck, goose and great auk seem to be most numerous.

A peculiarity observed in most of the Maine shell heaps is that there are almost as many animal as fish bones. At Boynton's, fish ribs and vertebrae were common but the animal bones predominated. The writer has never known of claws or shells of lobsters occurring in shell heaps. Boynton's site, having been occupied as a place of residence for a long time, would have furnished us some evidence of the use of lobsters for food if they had been so employed by the natives. Some very small, minute bones have been preserved in the ashes, and as lobster shells are heavier than these light bones, we cannot conceive how they could completely disintegrate. Their absence seems to be due not to decay but to the fact that the lobster was taboo among these Indians.

CASTINE

In 1915 our expedition located at Castine early in June and observations were continued there during three months. We searched along the coast for Red Paint People sites but found none at this time. The Tarr and Stevens cemeteries on Georges River were explored in August of this year, with Castine as a base, and they are described on pages 87-93.

There were, however, numerous shell heaps in the region of Castine. The two largest, on the land of Professor Von Mach and Dr. Wheeler, were held as "reserves", and when the men were not needed elsewhere they were put to work on one or the other of these two sites. The work about Castine became of interest to the public, especially at Von Mach's, where the scene of our explorations was visited by several hundred persons. The Bangor and Piscataquis County Historical Societies held a field meeting at this site in mid summer.

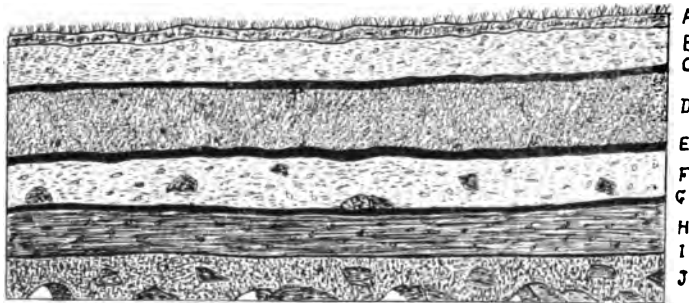
Little was found in any of the shell heaps lying within the town limits of Castine. Whether they had been examined by residents and visitors, or the dearth of material is due to their belonging to the historical period, is not known. My opinion is that when Indians came in contact with Europeans they abandoned stone-age implements. Moreover the location of cottages, French forts, early settlers' houses, etc. has greatly disturbed the ground. The site of Count Castine's Fort Pentagoet, built about 1666, was excavated by us so far as we could operate without damage to the walls or property.* We found that it had originally been built upon an ancient shell

*Dr. Wheeler says the first French settlement at Castine was about 1614.

heap, but the soil was so much disturbed that accurate observations would be impossible. Hand-made nails, some knife blades, a slender dagger, gun flints and other European objects were uncovered. Most of these we left with the Castine Library to be preserved.

Other comparatively small heaps within a short distance of Castine were excavated and the contents shipped to Andover.

We spent June 22-24 on the shell heap at Leach's Narrows owned by Mr. Hooper. It is six kilometers up the Bagaduce River on the north bank and is about forty meters long. The depth ranges from twenty centimeters to one meter, with an average of half a meter. We ran several trenches, connecting them later, and cleaned out the pits sunk by former excavators. Our total trench was about eleven meters long, measured back from the edge. We took out many objects of bone and stone and found also near the surface a small copper cross, perhaps a crucifix given to some Indian warrior by the priest at Fort Pentagoet. There was a heavy growth of thorn bushes and under these we found most of the objects. Nearly all lay in black earth in the lowest layer of shells. There were thousands of brown-tail moths on small bushes, and as our men suffered greatly and were completely covered by the hairs, we were obliged to cease operations for a day or two.



Cross Section of Von Mach's Shell-heap.

- | | |
|-----------------------------------|--|
| A. Turf. 6cm. | F. Shells and earth. 15cm. |
| B. Upper layer of shells. 20cm. | G. Decayed vegetation layer. 2cm. |
| C. Decayed vegetation layer. 2cm. | H. Blackened shells, earth, etc. 15cm. |
| D. Heavy mass of shells. 70cm. | I. Decayed vegetation layer. |
| E. Decayed vegetation layer 3cm. | J. Base, mostly ashes. 20cm. |

FIG. 78.

On June 26th we worked on a point of the mainland opposite Nautilus Island and south from Castine Harbor, in a cove about three hundred and fifty meters east of High Head. Here we found a shell heap some one hundred and ten meters long, and we started digging. Near the west end of our trench we found the top of a human skull, forty centimeters down, and near it lay some split animal bones. This was not a burial. Two meters from the east end of the trench and nearly one meter deep were fragments of another human cranium and the head of a femur. Animal bones lay next to this also. These deposits were kept separate in our packing boxes. Similar finds at Boynton's and elsewhere bring up the question of cannibalism among the shell-heap people, which will be discussed in our Conclusions. There were numerous small fragments of pottery scattered through this heap, and about a bushel of bones, flint chips, broken implements, etc. were saved.

The shell heap on Ludlow's Point is situated less than two kilometers up the Bagaduce River from Leech's Narrows. The site here is small, being not more than twenty meters in length by twelve meters in width. The shells are not thick, but there is a great deal of black earth, charcoal and ashes. The deposit varies from fifteen to thirty centimeters in depth. For the size of the ground, this place yielded more objects than any other in which we have dug. The men found about seventy chipped implements, one hundred worked bones, and one hundred pottery fragments, celts, etc. within this small space. Also the average of specimens found on this site was better than of those from other places, the objects exhibiting a finer finish. Ludlow's Point may be considered the site of a small village rather than a refuse shell heap of the usual character, since in such heaps the art is crude and few well-made specimens are found in proportion to the whole number of objects.

Wheeler's Cove Shell Heap. While the men were working at Ludlow's Point, the boys and I spent our time on a shell heap lying on the south side of High Head, at a place which we named Wheeler's Cove, in honor of Dr. George A. Wheeler,* who has given us much information concerning this region. This heap was over one hundred meters long and from one-fifth to two-thirds of a meter in depth. Work was done here on June 26, 28, 30, and July 1-3. Four or five test pits were sunk and these were gradually extended until they joined in the form of one large trench, the area dug out being about forty by twenty meters. We recovered 1114 objects, of which 319 were pottery fragments and the remainder bone and stone, but the percentage of worked bones and stones was not high. Although so near Fort Pentagoet, only three or four objects denoting contact with Europeans were discovered. On the last day of work a skeleton, fairly well preserved, was found, the head lying a few centimeters down in the shells. (See fig. 77.)

* Author of "Castine, Past and Present." Boston, 1896.

The shore here is rather rough and rocky, although there is still a large clam flat in front of it. We concluded that the Indians came here only to eat clams and that there were no cabins or wigwams on the site. It was a short distance by canoe from better beaches, and Nautilus Island or Henry's Point were better suited for habitation. As the extent of our excavations was such that we had given the heap a good test, the results did not seem to justify further work here.

Von Mach's Shell Heap. The largest shell heap near Castine is on the estate of Professor Edmund Von Mach, who owns the land known as Henry's Point, lying about two kilometers east of Castine, across the mouth of the Bagaduce River. This heap is two hundred meters long or more, and lies nearly east and west, following a slight curve of the shore line. The bank on which it is situated is four or five meters above high tide. The location is ideal for an Indian camp, being rather level, with a gentle upward slope toward the north.

Professor Von Mach kindly gave permission for unlimited exploration and we decided to make a thorough excavation, as this large heap might give us data on the culture of the Castine Indians. There was no more promising site in the neighborhood and diligent search had failed to reveal any interior village site. Again, as it was some distance from Boynton's and still further from the Mount Desert heaps, some difference in local culture might be observed. Accordingly we decided to put a crew of three or four men at work here, who would change places with a second crew for the reasons stated (p.154) keeping the work continuous. Work was begun on July 14, and for two months, from two to six men labored on this heap. Our total excavations are estimated to equal one hundred meters in length and forty in width.

The heap varies from one third of a meter to one and one half meters in depth and near the center of the deposit the shells extend back toward the north for at least thirty meters. It is said that five or six meters of the bank next to the sea have been washed away during storms. The test pits developed the fact that a thin layer of shells extends nearly two hundred meters toward the east from the center or thickest part of the heap. If one counted to the end of this layer, the heap would extend to the shore line opposite Professor Von Mach's residence and be more than three hundred meters long, but we began measuring from the sunken road leading from his meadow down to the ocean, and consider the main part of the heap to be about two hundred meters, as stated. The central portion of the heap was, roughly, one hundred meters by twenty-five meters and varied from two thirds to one and a half meters in thickness.

Our first trench was twenty-seven meters in length and twelve in width. Very little was found in the upper layer, most of the bone and stone objects being near the bottom. Much of the heap was dug out with hand trowels, although the ordinary tools were used for the heavy work. We frequently

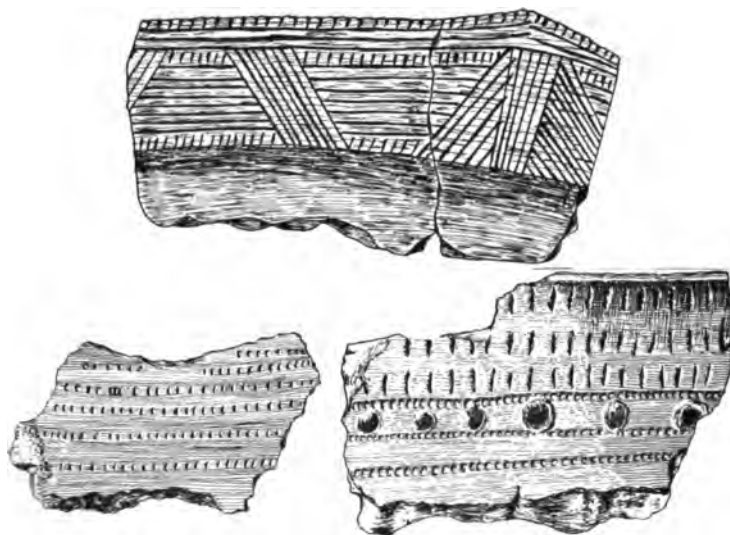


FIG. 79. At top, fragment of decorated pottery, later Algonquian; below, two fragments of decorated pottery, Archaic Algonquian. S. 1-2. Von Mach's.

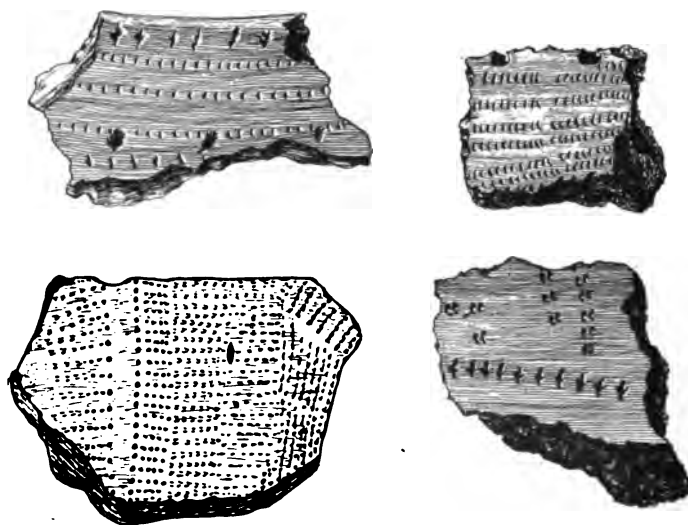


FIG. 80. Fragments of decorated pottery. Archaic Algonquian. S. 1-2. Von Mach's

found areas of two or three meters where there were very few objects. In such places four or five men would shovel the shells and debris back of them and five students or boys would look over this material with hand trowels. This hand-trowel work resulted in the finding of more objects than were recovered when we used other tools. We did not explore all of the heap, for the reason that our finds were duplications of previous acquisitions and we needed the men for other work. A number of drawings were made by my son, since the photographs did not come out clearly.

Nothing very remarkable was learned from a detailed study of the shell heap itself. There were several depressions due to the natural irregularities of the surface or possibly to fire places dug into the ground when the first wigwams were built. In all shell heaps the ashes are thickest and the most objects are found where these depressions occur. The surface of the heap is quite regular, sloping gently toward the sea, and the irregularities are therefore at the base line, not on the surface.



FIG. 81. Large, stone celt or hatchet blades. Boynton's shell heap. S. about 1-4.



FIG. 82. Small, stone celts from Boynton, Stover and Wardwell shell heaps. S. 1-3.



FIG. 83. Stone celts of the smallest forms. From Boynton, Stover, Sullivan Falls shell heaps. S. about 1-2.

It is evident that this heap was a long time in forming. There were numerous layers, which were most noticeable in the thickest portion of the heap, but at no point were more than four in evidence.* These did not extend more than ten meters continuously in any place. Frequently they ran six or seven meters and then became irregular. These layers are due to different periods of occupation but it is not probable that the entire surface was evenly occupied at one time. Rather, there must have been first a cluster of a few wigwams at one spot; then possibly years elapsed and the mound of shells, fire stones, etc., left by the aborigines became covered with grass or other growth; then other Indians visited the spot and built; their structures went up on the former site, and thus the heap accumulated.

All the shells from top to bottom are apparently of the same species as the clams found today about Castine, although the average size is much larger. Some of them were saved for examination. In many places the shells were burnt. There are not so many shells at the base as higher up, the lower stratum consisting chiefly of charcoal and ashes, with more large burnt rocks than are found in the middle layers. These boulders must have been upon the original surface of the ground. It seems possible that Indians lived here before they began to eat clams, although the absence of shells in the bottom layer (see fig. 78) may be due to their having decayed, as they must of neces-

* See fig. 78, from a drawing. The photograph did not show the layers, which were apparent to the eye but not sufficiently clear as to colors or shades to affect the lens.



FIG. 84. Large tools for grinding, polishing, etc., Stover's site. S. about 1-4.

sity be very old. At one point we found twelve or fifteen large fire stones lying in a rough circular depression, which may have constituted an Indian hearth or fire place.*

Near the western end of our trench there was a very heavy growth of thorn bushes along the ocean front, which the men cut back some twelve meters in order to dig under them. In the middle of these bushes was a pile of heavy stones which had been hauled out by farmers and dumped over the edge of the bank and had not been moved for forty or fifty years, according to the testimony of old residents. I mention this particularly because several persons told me that Von Mach's heap had been previously explored. I am not aware, nor can I find any record, that scientific exploration of shell heaps had been made previous to 1880, in the State of Maine; certainly no one had ever explored under the large stone heap which we moved. We worked very carefully under it, but could find no more objects there than at other points in the heap, which seems to prove that the rest of the heap was also in an undisturbed condition. Just west of our main pits and running from the face of the bluff toward the ocean we found two small trenches, three and five meters long and now overgrown with small bushes, which must have been dug eight or ten years before. These were the only traces of previous work.

Something over twenty-four hundred artifacts were taken from Von Mach's shell heap, 537 being pottery fragments and the bone implements (awls, fish hooks and harpoons) numbering 1074. There were several bone gouges, one long slender one measuring twenty centimeters. At a number of points we found hammer stones, discs, or turtlebacks, and a great quantity of small chips and spalls. This was where the ancient implement maker fashioned his tools. We saved such deposits carefully, entire, as they usually occurred within a space one third to one meter in extent. Numerous flat, slightly hollowed stones, known as anvils, were taken out. These too were usually surrounded by numbers of the flint chips, spalls, etc. of a workshop site.

The best pottery was found one half meter to one meter below the surface. Some of the fragments fitted together, but it is my opinion that it would be impossible to restore more than one-third of any single clay vessel. Some very fine decorated pottery, shown in figs. 79 and 80, was found by Mr. Sugden at the base line near the eastern end of our trench, but he was unable to secure pieces enough to restore an entire jar or bowl, although he worked with a hand trowel for a distance of three meters in every direction. The decorations and form indicate one of the finest pottery vessels ever discovered on the New England coast.

* The stones were carefully removed and transported by Dr. Philbrick to his residence in Castine where they were built into an open-air fireplace on his lawn.

Careful study failed to reveal any European objects in either upper or lower layers. In fact, in all our diggings in this neighborhood no objects of French, Dutch, or English origin were discovered except a few in Wheeler's Cove heap and now and then one in the shell heaps on the Bagaduce River. Some fragments of human skeletons were found, notably the heads of femurs. Why the head of the femur should be preserved rather than other bones, I do not understand.

Whether the site was inhabited by the so-called Red Paint People, I cannot determine, but my opinion is that it was not so inhabited, although it is apparently prehistoric. It seems to belong to the general shell-heap culture.

The surprising thing in connection with the two largest shell heaps near Castine — Wheeler's Cove and Von Mach's — is that, although the area of either one almost equals that of Boynton's at Lamoine, the number of specimens found is by no means so large. Indeed, three smaller heaps in this region yielded many more objects in proportion to their size than the large ones. This cannot be due to previous exploration so much as to the fact that the Indians on these larger sites did not leave any considerable number of tools.

While the men were digging at Von Mach's, I took a few of the boys and visited Hog Island, ten kilometers south of Castine, and looked at the shell heap there, which is larger than any of those located nearer Castine. We also dug several pits on the shell heap situated on the adjoining island, known as Pond Island. The largest of these heaps is at one point nearly two meters deep, but it has been greatly disturbed and we did not do much digging. We found very large quahogs and clam shells, some of them twenty-three centimeters in diameter, which we saved; also a beautiful pin or hair ornament about thirty centimeters long and carved from solid bone. This is the largest bone implement I ever saw taken from a shell heap.

The work about Castine was completed by inspecting some of the shell heaps about the eastern part of Penobscot Bay and on Eggemoggin Reach. We ran a trench through the large heap on Dr. J. Howard Wilson's estate on Nautilus Island, but the objects found indicate the same type as those discovered at Von Mach's. Further research in the shell heaps of Castine may yield more objects, but we assume that they will be of the same general character and will add little to our present sum of knowledge.

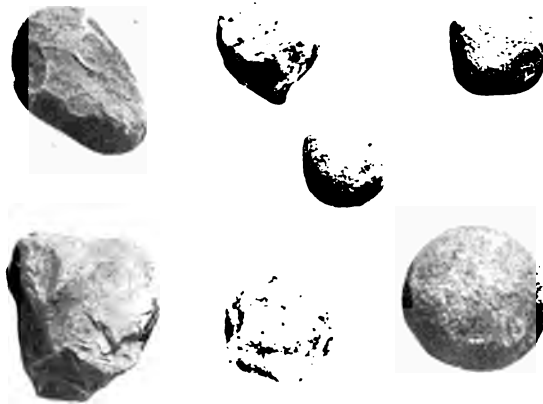


FIG. 85. Series of hammer-stones. Boynton's shell heap. S. about 2-5.

B. MATERIAL FROM THE SHELL HEAPS

During several years of explorations in the State of Maine, we dug in some thirty-five or forty shell heaps. In those heaps in which very little pottery or few bone or stone implements occurred, we stopped work after opening four or five pits. A large crew was taken along and therefore it was possible in one day, with an average of ten men and boys, to excavate an area 8 m. in length, 6 m. in width and 1 m. deep. Therefore if a day's work in a shell heap resulted in finding less than fifty or sixty objects, the heap was abandoned and we got aboard our boats and moved to another site.

Of the shell heaps examined, there were ten or twelve in which considerable work was done, and since these have been mentioned, no further general description of them is required. In these heaps there was no uniform amount of material to be found in each square meter. One small section would contain ten to fifty chips, spalls, bones, tools, etc. while another in the same site yielded up very few artifacts or little refuse. The places where we found the most debris were undoubtedly wigwam floors and those marked by masses of clean shells were where the natives ate their clams out of doors in good weather and threw the shells down near where they sat. Where the traces of fires were heaviest, we found the most other indications of human occupancy. This would be the case on sites occupied in the early spring or through the winter, when shelter was necessary. The Boynton, Stover, Von Mach and Butler sites seem to have been such permanent camps, for so much material would not occur in small spots, about mere late spring or summer residences. It would be more scattered and have less kitchen-midden accumulation.

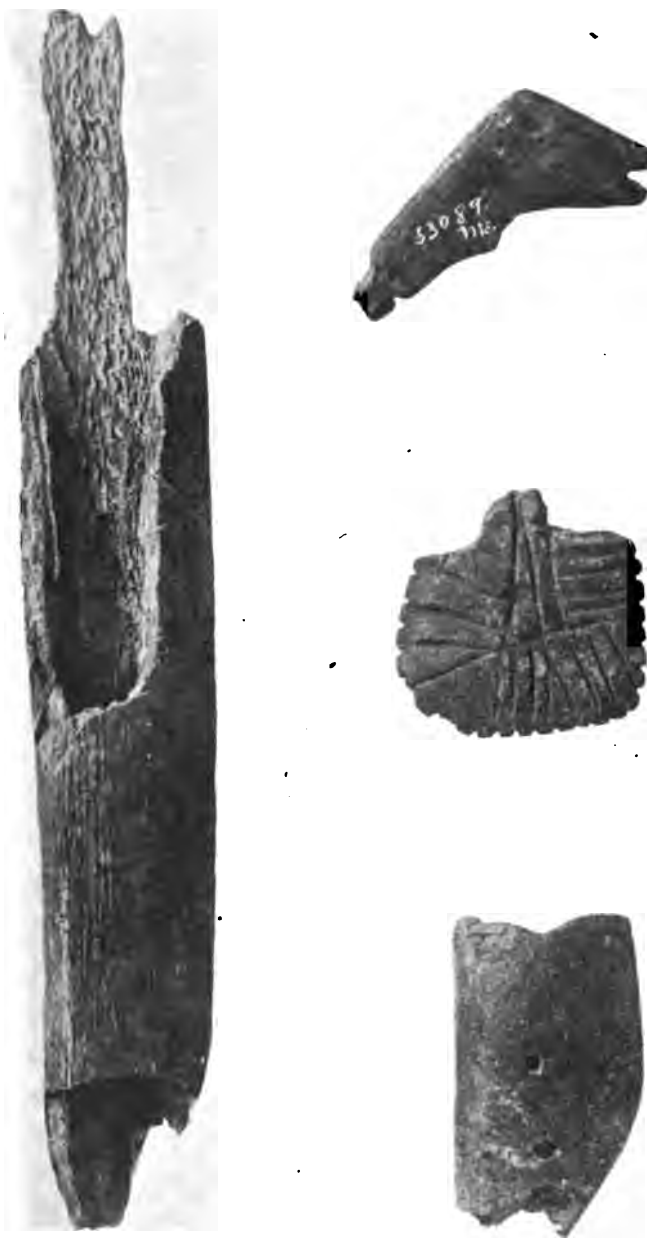


FIG. 86. The split human tibiae, ornaments and pipe from the shell heaps. S. 4-5.

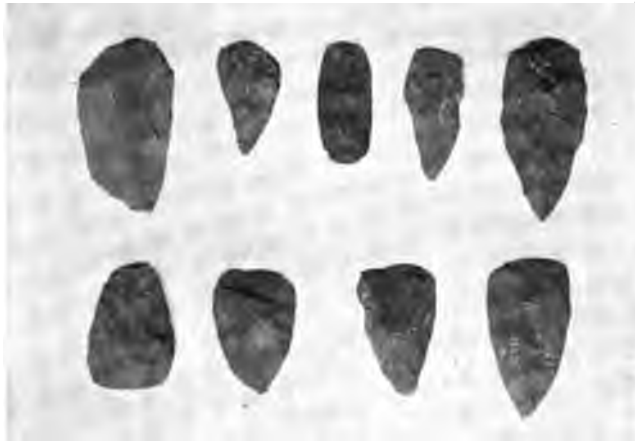


FIG. 87. Oval or primary forms of chipped objects. Stevens', Boynton's, and Wardwell's sites. S. 1-2.



FIG. 88. Eleven finished and unfinished knife forms. Some of these might be worked into arrow-points. S. about 1-3.

The implements found in the shell heaps are mostly service tools of one kind or another and are to be sharply distinguished from artifacts accompanying burials. "Nothing common or unclean" will apply to the average mortuary offerings of Indians; the reverse is true of kitchen-midden and shell-heap finds. Here we have the work-tools, vessels and other objects used in daily life about the camps or wigwams. The finer personal possessions and tools are absent, so much so that it is an almost daily remark on the part of the survey corps, that nothing really fine or artistic in the way of implement is discovered in these places. We shall illustrate later a few specialized bone tools and perhaps two or three ornamental stones, but comparing the hundreds of square meters of excavations in shell heaps with the amount of digging in cemeteries, the proportion of well-wrought artifacts in the heaps is practically a negligible quantity.

A general sub-title, therefore, for all shell-heap finds except the shells and broken animal bones should be utility or service tools. Under this head we might group them tentatively as follows:*

<i>Stone</i>				
Ground	{	Celts	Chipped Unfinished	Turtlebacks
		Hatchets		Discs
		Rubbing stones		Blanks
		Plummets		Blades
		Axes		Hammer stones
Pecked or Battered	{	Hammer stones	Chipped Finished	Spear heads
		Pestles		Arrow heads
		Scrapers		
		Knives		
		Drills		
		Flake knives		
<i>Bone</i>				
Unfinished	{	Cut or ground bones	Finished	Awls, single
		Awls		Awls, double
		Handles		Arrow points
		Jaws		Fish hooks
		Long bones		Ornaments
		Handles		
		Decorated bones		
		Harpoons		
		Beaver-tooth chisels		
		Flaking tools		
<i>Clay</i>				
Pottery				
Pipes				

* At some future time this classification should be expanded and worked out in detail, since there is abundant material for a monograph on this single feature of prehistoric life in New England.

GROUND STONE

The majority of the ground stone objects are rude rubbing stones and oval stones varying from eleven to twenty-two centimeters in length, which appear to be on the border line between the celt-hatchet form and the ordinary rubbing stone. Pebbles of various materials in suitable sizes occurred along the shore-line. Natives selected those most nearly of the desired form, transported them to the village and ground them to sharp edges for hatchets or celt blades. They knocked fragments from either side along the edges of others and used them probably as short hand clubs. Fig. 81 presents three of the large celt-like forms with fairly sharp edges, from Boynton's shell heap. The originals of these are about eighteen centimeters in length. They are made of granite, while others are of trap and heavy slate. These forms are rather oval in cross section and do not differ from the ordinary celts such as occur on Algonkian sites throughout New England. Smaller celts or hatchet blades are shown in fig. 82. These are from Wardwell's, Stover's, and Boynton's shell heaps. All of them are blackened by contact with charcoal and ashes. Fig. 83 illustrates the very small chisel-like blades common in the heaps, which range from six to twelve centimeters in length. None of these tools show any specialization and they were probably used in removing hides from animals and scraping hides to reduce them to proper thinness for robes or clothing.

In our collections there are at least four hundred hatchets, celts and rough stones which might be classed either as unfinished hatchets or as stone clubs. Fig. 84 is a series of four large stone tools found in Stover's shell heap, similar to those from Boynton's and elsewhere, ranging from twelve to twenty-two centimeters in length. They are not edged and therefore can not be classed as hatchets or celts, but all show marks of abrasion. Whether these were used for breaking bones in order to extract marrow, or served as general hand weapons, the writer is unable to state. One thing is certain, they are not edged tools. They might be rude pestles. It is a simple matter to arrange a continuous series beginning with the well-defined celt or hatchet and ending in the elongated, club-like stone object. At some future time, when some one makes a detailed study of all the thousands of implements from the shell heaps, in the Peabody, Bangor, Andover and other museums, we may be able to assign specific uses to such objects. Space forbids further discussion here.

So few plummets were found that we may pass to the axes, of which we have but two or three. They are large, rough and grooved, and do not differ from ordinary Algonkian forms of the hafted axe. No Red Paint People forms of adze blades were found by our surveys in the shell heaps. This seems significant and should be the subject of careful research in the future.

Under the term pecked or battered stones are the hammer stones, seven

of which are shown in fig. 85, from Boynton's shell heap. These are very common and may be the ground, carefully worked hammer, or the irregular quartz, granite or trap-rock hand hammer. They do not differ essentially from hammer stones found elsewhere in the United States.

Two ornaments of fine-grained sandstone were discovered in Stover's shell heap and these are shown full size in fig. 86. Both were down near the bottom and lay in a deposit of decayed shells and animal bones. The effigy pendant is more nearly like Red Paint forms than anything else we found, but the flat, incised ornament is rather different.

CHIPPED STONE

One would naturally suppose that next to bone implements and tools, the usual chipped knives, scrapers, projectile points and flint rejects would be most common in the shell heaps. This supposition is entirely correct. Great quantities of felsite, quartz, quartzite and occasionally dark flint artifacts occurred in the heaps. It is not difficult to classify them, for most of the finished ones are simple forms.

By far the greatest quantity of chipped material, however, consists of large flakes and spalls, which, if found elsewhere than in shell heaps, might be classified as rejects. Considering the simplicity of shell-heap tools, it is more likely that many such fragments of felsite, quartzite and kindred material, from five to fourteen centimeters in length, were used as tools in opening clams and splitting bones, sawing bones into sections, etc. In fact, a skilful blow with a stone hammer on a block of Kineo felsite would produce a large flake with a very sharp, thin edge, which might well serve as a knife. It is not to be supposed that the shell-heap dwellers would resort to the trouble of working out a complete knife when a flake would serve the purpose just as well. It is now known that the dwellers in European caves, prior to the higher development of stone-age art, made use of large flakes as knives. Many hundreds of such flakes have been found in our shell heaps, and probably several thousand at Boynton's alone. One is shown on the right in fig. 91. Although our survey retained large numbers of them, a great many were not preserved. Had they been, our total of 7,200 specimens of human handiwork from Boynton's would have been considerably augmented.

The finished specimens, in the order of frequency, are; (1) Forms without stem, either oval (leaf-shaped) or triangular. (2) With stem (shouldered) but not barbed. (3) Shouldered and barbed. (4) Scrapers. There are no specialized knives and very few drills. The oval forms such as are shown in figs. 87 and 88, are seldom classed by archaeologists as projectile points. They are probably small knives, although they may have been projectile points.* They vary from about six to twelve centimeters in length.

* See the "Baltimore Classification," Baltimore meeting of the American Anthropological Association, December, 1908, in *American Anthropologist*, Jan.-Mar. 1909, pp. 116-118; or "Stone Age in North America," W. K. M., pp. 23 ff.

The nine shown came from Stover's, Boynton's, and Wardwell's sites. Fig. 88 illustrates eleven simpler, not specialized forms, in which it will be observed that there is little or no secondary chipping. Fig. 92 represents four knives, two from Von Mach's shell heap and two from Boynton's, of more specialized form than is usual in shell heaps. Fig. 90 illustrates four chipped objects from Von Mach's and Boynton's. Attention is called to the contrast between the two slender knives and the rather thick, oval forms, which are the most common. Fig. 89 shows five typical shell-heap knives from Von Mach's and Boynton's sites. They are of felsite and well wrought and for the most part have straight bases. Fig. 91 illustrates on the left a sharp knife, one end rather straight, the other rounded, which is also a common artifact. In the center is a heavy flake, chipped along the side; it might be termed an elongated scraper. These are rather common. To the right is a heavy flake-knife of the kind described on the preceding page. There are few if any large spears or knives, and it is probable that the shell-heap people usually contented themselves with making rather small chipped objects.

Fig. 93 is a series of scrapers. We seldom find the specialized, spoon-shaped scraper or the notched scraper, nearly all ours being of the ordinary oval forms shown here. The natives in the west re-chipped the edge of a broken arrow head to convert it into a scraper, but this practice does not appear along the Maine coast. Most of the scrapers here are wrought from flakes, but occasionally from broken knives.

The nearest approach to the drill form is seen in the second from the right in fig. 94. These objects are probably small, slender knives, rather than perforators. The arrow points and spear heads are of the long, slender forms shown in fig. 95. These specimens are from Stover's, Wardwell's, and Boynton's shell heaps but are also typical of finds in chipped objects from the Castine region.

We spoke of the rarity of fine workmanship in the chipped objects. Fig. 96 shows the best of the larger forms we found. The longest spear head is bevelled and almost rotary, which is not usual in Maine. The broad, almost "pennate" spear head was originally longer, but became broken, was re-chipped and made serviceable. The two deeply barbed points are above average workmanship. Such projectiles are not types but either mark occasional ability of shell-heap dwellers to do unusually good work or they may have been acquired by aboriginal trade from elsewhere. As will be observed later in this volume, much finer art in chipped stone is found on the interior village sites than in the shell heaps.

In speaking of the materials, we use the term "Kineo felsite," but there are many boulders of this same material along the Maine coast and it is quite likely that local material, as well as that from Kineo, was used.



FIG. 89. Typical shell heap knives from Von Mach's and Boynton's. S. 3-5.

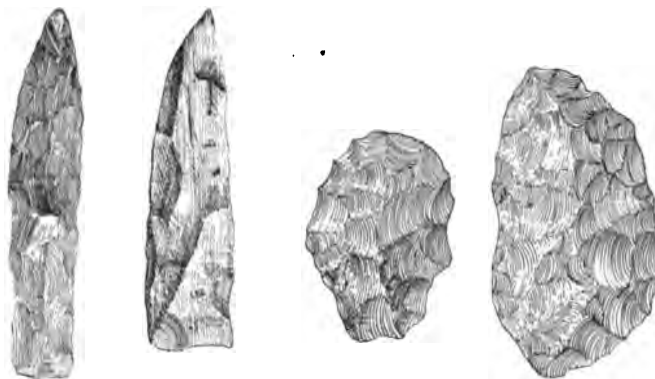


FIG. 90. Slender and broad knives from Von Mach's and Boynton's shell heaps. S. 1-2.

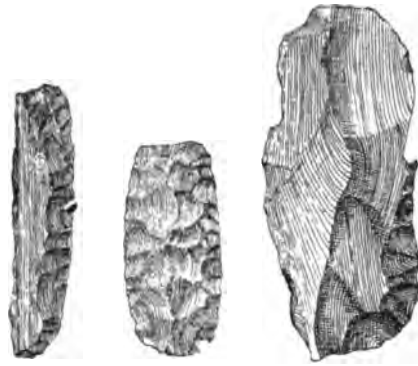


FIG. 91. Short knife and elongated scrapes, and one of the heavy flake knives; Boynton's. S. 1-2.

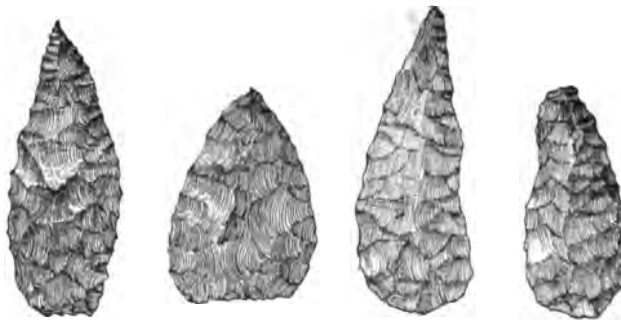


FIG. 92. Knives of more specialized forms, from Von Mach's and Boynton's shell heaps. S. 1-2.

POTTERY

As stated before, we have been unable to restore any entire vessel from the pottery found in the shell heaps. In figs. 79 and 80 some of the fragments of decorated pottery are shown. They are of the types called archaic Algonkian and later Algonkian by Mr. Willoughby in his study of the pottery of the New England Indians in the Putnam Anniversary Volume.* A comparison of the large number of fragments found in our shell heaps with his text and illustrations indicates that what he terms archaic Algonkian pottery is most common here. We find some fragments of later Algonkian, particularly at Von Mach's (upper object in fig. 79) and elsewhere about Castine, but it is not common in the heaps. Careful study of the Phillips Academy collection might reveal some Iroquoian, but the writer has observed none of it.

Some comments in the article cited on the pottery from the great oyster-shell mounds at Damariscotta are of interest. Professor Putnam placed an observer on the spot at the time one of the larger mounds, known as the Whaleback, was levelled in order that the shells might be ground for commercial purposes. Pottery was found scattered throughout the heap, and some archaic Algonkian was at a depth of nearly five meters. A decoration of broad vertical bands of incised or indented ornament, which Mr. Willoughby calls an unusual arrangement seen only in very old specimens from the lowest layer at Damariscotta, occur also on some fragments from the shell heaps examined by our surveys.

Mr. Willoughby states:** "It seems that the art of pottery-making was not indigenous to these states, but was brought to this region at a period nearly approaching the time when shell-fish were first used for food along our coast. Moreover, but little if any advance was made in this art during the long period necessary for the accumulation of most of the shell heaps, pottery from the lower layers showing the same general characteristics in composition of paste, in form, and in decoration, as that from the upper layers."

* New York, 1909, pp. 83-101.

** *Loc. cit.*, p. 88.

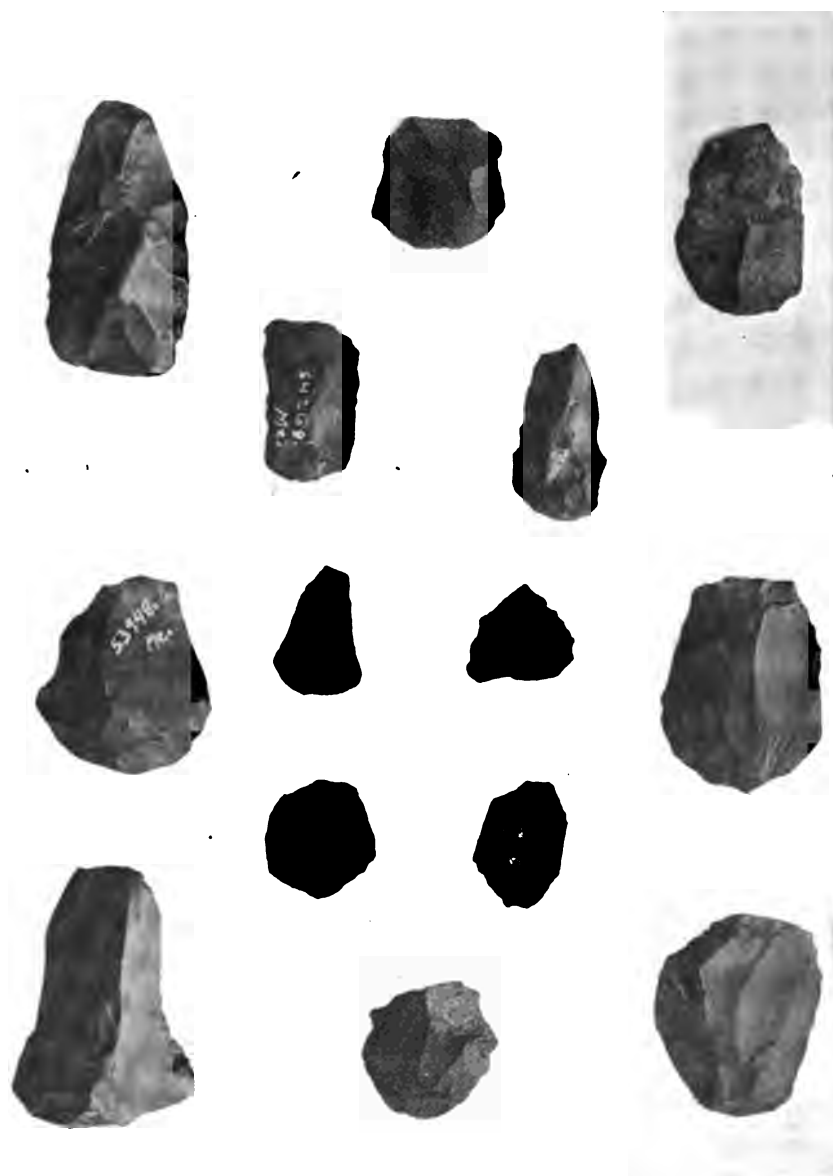


FIG. 93. A series of scrapers. Calf Island, Stover's, Boynton's and Butler's. S. 3-4.



FIG. 94. Small, slender knives and triangular arrow-points from the shell heaps. S. about 1-2.

The earliest pottery was apparently of the pointed-base type. Later this was modified, especially after contact with the Iroquois, and the bases became more rounded, but in strictly prehistoric sites more of the pointed-base type is found than of the later Algonkian. Iroquoian potters seem to have been more skilled than the Indians of New England. The natives of Maine were not skilled potters and they used ordinary crushed shells or powdered conglomerate for tempering, in the place of lime. Willoughby has expressed the opinion that perhaps their clay was not carefully selected. Possibly our Indians might have developed a higher ceramic art had they used better materials.

It is suggested that when the next large, undisturbed shell heap is explored, the entire structure be hand-trowelled and all pottery fragments found within an area of four or five meters kept together. Such a procedure would be very expensive but by such means it might be possible to secure enough related fragments to restore, or partly restore, some entire vessels. The exhaustive study of New England Indian pottery recommended by Mr. Willoughby, might well be deferred until more original exploration or field work has been carried on throughout the country east of the Hudson River.

BONES

Doctor Allen, in his examination of the skeletal material from the heaps, has stated that there were more deer bones present than those of any other animal. Messrs. Loomis and Young, in their report on the several shell heaps investigated,* state that not only is every long bone split or crushed, but that small bones such as the toes are also broken to secure the marrow. As the condition of the deer crania which they found may have a bearing among other things upon the time of year at which the shell-heap sites were occupied, I quote from their report on Sawyer's Island shell heap as follows:** "There were 53 crania preserved, of which 52 belonged to males and only one to a female. Mills concludes*** from a similar state of affairs in the Baum Village Site, that the Indians showed a foresight for perpetuating the deer in advance of that now exercised by man generally. However, from studying the small fragments of other crania, we feel that the explanation is to be sought in another direction. The crania were always broken open to get out the brain. In the case of males with the heavy frontals, strengthened to support the antlers, the smashing of the brain case was done in the parietal region, the thickened frontals remaining intact; while in the case of females, the frontal bones being thin, the cranium was broken through this region, or they were at least also broken in getting the brain out. So only in males are the front parts of the cranium preserved intact.

* See p. 119, foot note.

** *Loc. cit.*, p. 23.

*** "Ohio Arch. and Hist. Soc. Quart. XV, p. 79. 1906."

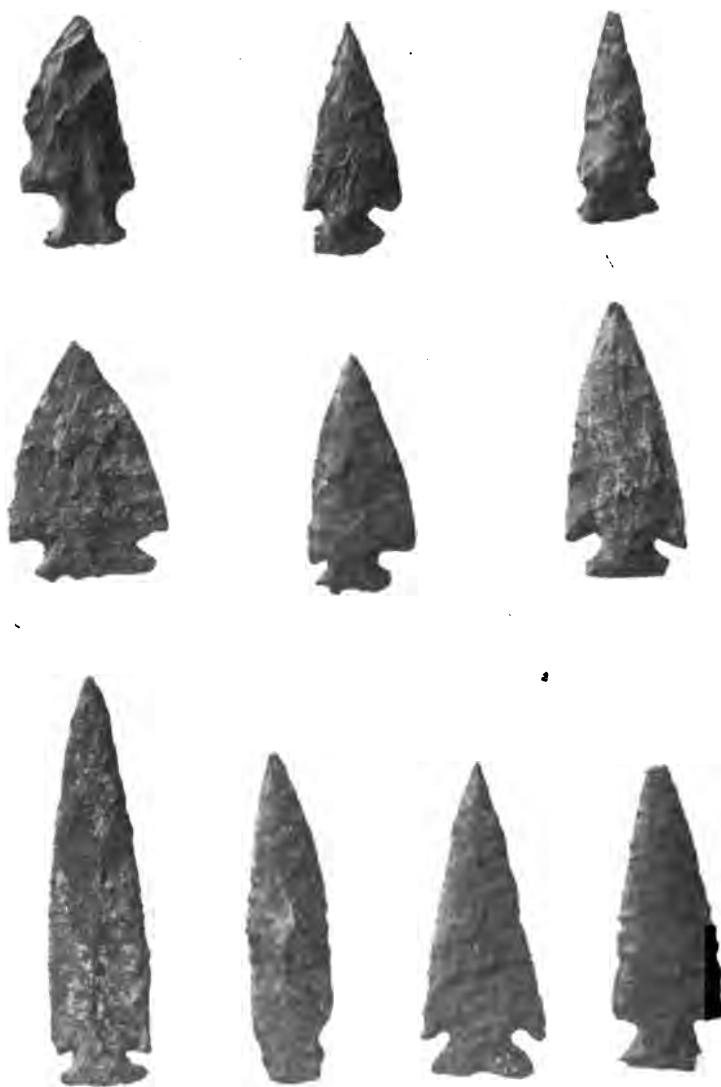


FIG. 95. Typical arrow-points and spear-heads from the shell heaps. S. 2-3.



FIG. 96. Fire hafted, chipped objects from Boynton's, Butler's and Von Mach's. Usually the forms from shell heaps are more simple than this. S. 1-2.

"Another interesting feature of the crania is the fact that 52 of the 53 crania belonged to individuals who had recently shed their antlers and had not as yet grown new ones. In other words, these deer were killed in the spring. The absence of individuals with partly developed or perfect antlers indicates, further, that the camps were simply spring camps, which also coincides with the best fishing season, and is the evidence that these heaps were made during periodic visits to the sites."

As there were many caribou in Maine when the first settlements were established it is curious that so few caribou bones are found in the shell heaps. Either that animal came in, in comparatively recent times, or the caribou kept back from the coast. Old hunters inform the writer that there were still many caribou north of Bangor and particularly in the Mt. Katahdin region in their early days, but they were not to be found near the sea. This may account for the absence of caribou bones in the heaps.

BONE IMPLEMENTS

Willoughby's suggestion that the pottery of New England should be studied in detail applies also to the thousands of worked bone tools, bones in process of manufacture into implements, and broken bones, in the Salem, Cambridge, Andover, Portland, Castine, New York and other museums. A large volume could be prepared upon the technology of this wealth of material scattered throughout the museums.

Bone was much more easily worked than stone. Moreover, it was always obtainable. In the winter, when because of ice or snow it might be difficult or inconvenient to procure stone, there were always in the wigwam the bones of various animals which had been killed for food. It is quite natural that the Indians, having eaten the bird or the animal, would make



FIG. 97. Antler-ends, worked into implements. Butler's, Hodgkins', Boynton's sites. S. 1-2.

use of the material thus conveniently at hand. Even the process of splitting the larger bones to extract marrow, suggested the making of harpoons, arrow points, fish hooks, awls, ornaments or knife handles from the fragments.

Teeth of Animals. When a large animal was killed and the skull broken to extract the brain, the fancy of the savage was attracted by the teeth. He usually removed those of bears, panthers and wolves and drilled them for suspension as ornaments, as is shown in fig. 75. We find in the heaps great quantities of teeth of large and small animals and our figure presents the animals named and in addition, the lynx, mink and beaver. These are all carnivora. The teeth of the moose, deer, beaver or raccoon were rarely perforated. Beaver teeth were sharpened and employed as chisels for working wood. We have at Andover several hundreds, most of which have thus been treated. They were probably inserted in short handles and used on pine, spruce or soft maple, for the manufacture and planing down of wooden objects or utensils.

Large Bones. The ends of antlers of deer and moose were sometimes used as awls, but more frequently, being blunt, as is shown in figs. 97 and 98 probably served as heads of clubs. The smaller deer prongs from southern and western village sites are frequently pointed and were used as awls. This custom did not obtain to any extent among the dwellers of the shell heaps. A few bone gouges were found in Von Mach's and Boynton's, but they were not common. They are usually made of moose antler for the reason that the moose horns were broader and hence more serviceable as gouges than the deer antlers. The larger bones served also as handles for stone tools, but most of them appear to have been cut into lengths for harpoons and fish hooks, and many of them are probably chipping tools for working quartz,

chert and felsite. The femur, tibia and humerus were heavy, and much stronger or more substantial tools could be made from these bones than from smaller ones. Fig. 99 at bottom, shows a heavy moose bone partly cut. The native's design was to split it carefully, then probably to resplit the halves and make handles. We secured various bones of the deer, bear, and moose along which deep grooves have been cut, apparently with flint knives, for the purpose stated. These heavy bones having thus been divided, were worked down further until such forms as those illustrated in fig. 99 resulted. All are made from solid bones. These cut or grooved bones are numerous and vary from 5 to 15 cm. in length.

Many of the cuttings indicate that the natives were working to secure sections of solid bones for short implements. More than fifteen hundred small, pointed polished objects were recovered in the two explorations of Boynton's shell heap. (See fig. 100.)

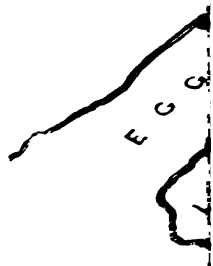
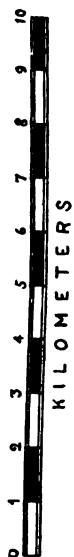
These implements might be used as arrow heads or as fish hooks. Fish were very plentiful and it was comparatively easy for the Indians to go out in their canoes and catch cod, hake, haddock, and other fish a short distance off shore. For this purpose a straight hook was just as serviceable as a curved hook, which might break. Where cod are numerous, it is not difficult to catch them even with such primitive tackle. An experiment has been tried by one or two members of the survey and resulted satisfactorily. Of the curved fish hook, the only one the writer has observed from Maine was found on the shore of Chesuncook Lake by Mr. Marks. It is unusually large and strong and served for catching lake trout or large brook trout. Curved hooks, barbed and notched for attachment to the line, are very common in village sites in the west and south but seem practically absent in Maine.

Bone Handles. Reference has been made to handles for tools, made of bone. Three of these are shown in fig. 98. The one in the lower right hand corner is an unusual form, the others are common. Some of the poorer so-called handles were probably chipping tools and it is somewhat difficult to separate those that should be so classified from the tool handles. Fig. 106 presents two of the more carefully made handles.

Awls and Needles. A great many slender awls and smaller pointed objects, which may be needles, were found. Eleven of them are illustrated in fig. 101. The two or three thinnest ones are made from large fish ribs, others from bones of birds and animals. These awls come from Von Mach's, Boynton's and Stover's shell heaps. There is nothing to distinguish them in form or manufacture from bone awls common in Indian sites. However, the one to the right is an exception. It is cut from a long, solid bone (perhaps moose) and is 26 cm. in length by 4 to 6 mm. wide. Found about one meter deep in shell heap. Neither is there anything special to remark with reference to the position of any of these bone tools. Two or three were



FIG. 98. Bone handles and flaking tools. Boynton's. S. 3-5.



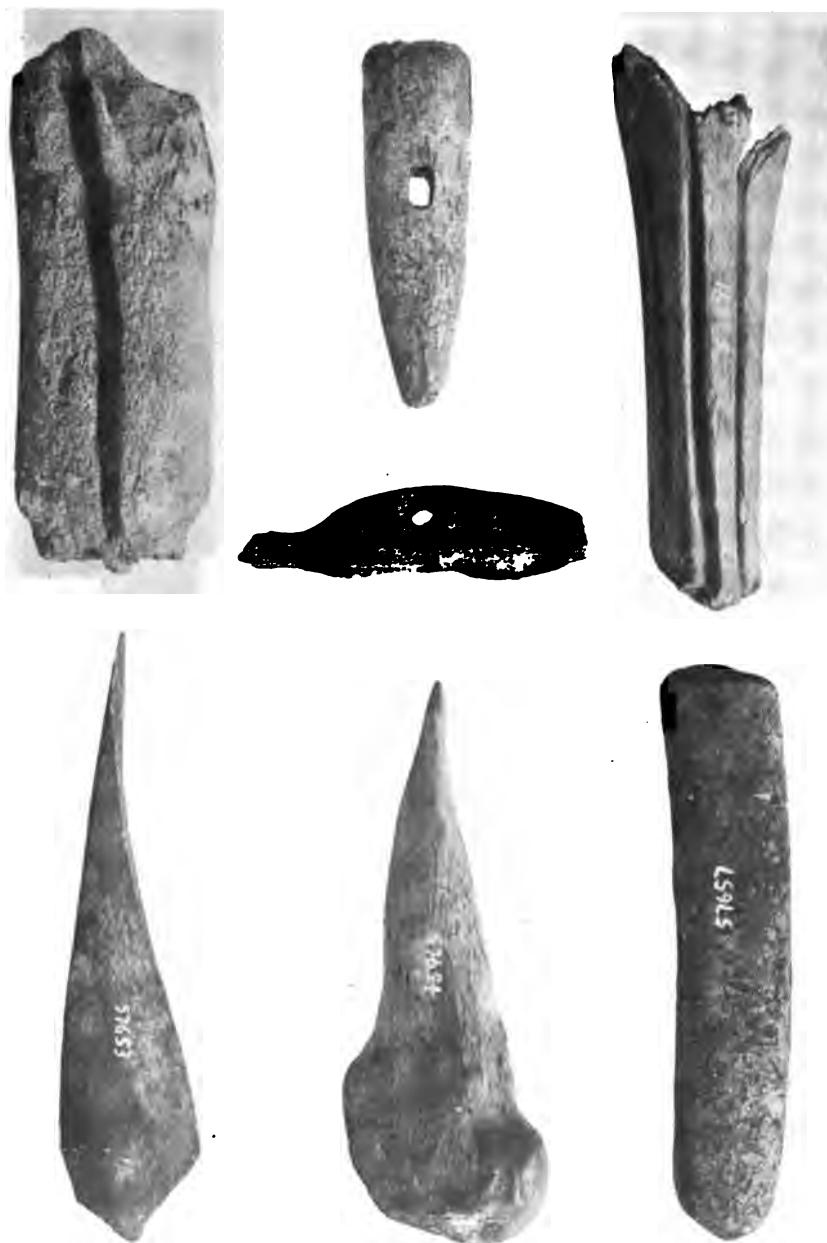


FIG. 99. Two large awls, two bone handles, broken harpoon, two heavy bones deeply incised,—(many of these have been found). Natives seem to have made their harpoons and arrow-points from heavy bones of the moose, deer and caribou. S. 3-4.



FIG. 100. Typical arrow-points and fish hooks of which several thousand have been found. From shell heaps. S. 1-1.



FIG. 101. Series of awls or perforators. The one to the right, (57664) —Pond Island shell heap is 26 cms. in length. S. 3-5.



FIG. 102. Series of harpoons, from Boynton's, Butler's, Von Mach's and Stover's shell heaps. S. 3-4.

found within a few centimeters of each other, but so far as we are aware no group or cache of them has occurred.

Harpoons. By far the most interesting series of bone implements consists of the specialized fishing tools, or harpoons. Fig. 104 shows several of the larger ones wrought from the heavy bones of large animals. They are from Boynton's shell heap. The larger object in the figure is about two centimeters in width and ten centimeters in length. Of the upper one, about one-third remains. These have seldom been found perfect. Fig. 103 portrays twelve harpoons from Boynton's, Stover's and Butler's shell heaps, and illustrates the different forms, from the slender, single-barbed to those with several barbs. Specialized forms are shown in fig. 102. Fig 103 presents three interesting harpoons. The upper left one is notched on one side, as are most of larger harpoons. Small ones are usually serrated on both sides. In fig. 99 is a broken harpoon of unknown length which is perforated in the center. Usually they are perforated at the end. Fig. 102 presents harpoons from Butler's and Boynton's shell heaps, those in the upper right and lower left corners having unusually small serrations. In all these figures we have thirty harpoons of various kinds from the shell heaps. The lower row in fig. 103 are the most common forms, especially the delicately shaped small ones, which are from five to eight centimeters in length. Of the longer ones, the originals are nine to twelve centimeters in length. The small ones, pointed at either end and carefully serrated, are as fine examples of aboriginal art in harpoon manufacture as any that we obtain from the shell-heaps. Fig. 105 presents, in two projectile points, a striking variation from the established types that we have been describing. The larger one, which was found in Boynton's shell heap near the bottom, is probably made from the femur of a moose or deer, although at first it was thought to be worked from a human femur, is shown full size. It is rather thick and somewhat curved on the inner side, and is the only large spear head of bone found in the heaps, so far as we can ascertain.

In this figure, at the top, is a portion of a long, decorated bone. Several of these were discovered, but always broken. A few slender perforated flat ribs, pointed at one end were also secured from the lower layers.

In this fig. 105 are six tools, four of which are double-pointed and all cut from heavy bones. Most of them are gracefully tapered or angular. The one nearest the point of the bone spear head suggests a drill in bone. Whether these are specialized awls or short harpoons, I am unable to state.

C. CONCLUSIONS

A number of interesting comments might be made as a result of the intensive work in these shell heaps. Messrs. Loomis and Young thought that the sites varied as to the predominating material found, whether of bone, or stone, or food remains. We have been unable to tabulate all the accumula-



FIG. 103. Series of harpoons, from Boynton's, Butler's, Von Mach's and Stover's shell heaps. S. 1-1.



FIG. 104. The largest harpoons, some of which are perforated. S. & S.

tions of our years of work and therefore cannot present statistical tables, but after somewhat careful observation, the writer concludes that, although there are differences between the materials and life forms of one site as against another, these differences are not sufficiently marked to change the general character of our conclusions.

In Fig. 86 is our most interesting specimen. It is part of a human tibia, shown 4-5 size, and was split, apparently purposely, as were the bones of deer and moose. This fragment of human femur was found associated with other broken human bones in Boynton's heap, but there were not enough to account for even five percent of a human skeleton. Reference has been made in the text to other fragmentary human bones found in these shell heaps. The several broken human bones, such as the femur, tibia or the skull, have been found by us scattered through the heaps as were the bones of ordinary animals. It might be premature to state that this is evidence of cannibalism, yet considering the numbers of these broken human bones recovered in relation to the amount of work done on the shell heaps, the writer is of that opinion.

Numbers of dog bones were found in the various sites. In Dr. G. M. Allen's recent paper, "Dogs of the American Aborigines,"* in which he presents illustrations and studies of the shell-heap dogs, he makes the statement that two or three kinds of dogs lived here at the time the shell heaps were accumulated. In answer to a question from the author of this report, he wrote under date Dec. 1, 1920: "The dogs were probably of two distinct, or more or less distinct, breeds. The major and common Indian dog I believe were really one, the same that I called the 'Common Indian Dog.' The minor dog is a smaller breed, and I have considered it identical with the 'short legged Indian Dog', the same as described by Richardson in the Fauna Boreali-Americana."

The extinct sea mink (*mustela macrodon*) may have been in existence when the first voyagers came along the Maine coast. Harbor seals are common now and their bones occur in large numbers in the heaps, together with those of the grey or Greenland seal, which has not been observed along the Maine shores for many years.

Careful search of the earth, ashes, and shells fails to reveal any considerable number of beads. Since the ashes have a tendency to preserve such delicate objects as fish scales or fish ribs, if bone or shell beads were in general use it is presumed that the Indians would have lost some of them about the heaps and they would be found. Great quantities amounting to several quarts of beads or wampum were found by us in a burial ground of the historic period at Sandy Point on the Penobscot; but we found no beads of consequence, only two or three, in all our shell-heap work. It seems reasonable

* Bulletin of the Museum of Comparative Zoology at Harvard College, Vol. LXIII, No. 9, Cambridge, 1920.



FIG. 105. Specialized objects. A large spearhead of bone with incised lines or decorations. It is 12 1-2 centimeters in length. A smaller object of bone, projectile point. These are the only two bone spearheads found in the shell heaps. A decorated bone is shown at the top. The others may be specialized harpoons. From Stover's, Boynton's, Von Mach's and Leech's shell heaps. S. 5-6.

to conclude therefore that the art of bead making, together with that of pipe manufacture, was almost unknown by the Indians who lived during the first few centuries of shell-heap construction. Later they probably had both beads and pipes.

The lack of ornaments in stone, but two being found, brings up the interesting question whether ornamentation by means of gorgets, etc., so common in western New England, was absent or nearly so among the shell-heap dwellers. There is the same question with reference to pipes and the custom of smoking. The presence of a few bone gouges and a lack of stone gouges is also to be observed. It would appear either that bone gouges preceded those of stone, or that the natives did not make use of stone gouges about the shell-heap villages. The lack of plummets, so common on ordinary sites back from the coast, is also significant. These factors indicate to the writer that possibly we have Indians of a poorer class, or less advanced, living along the coast. Otherwise, we must assume that those who did visit the coast for molluscs and fish brought none of their better arts with them, which it scarcely seems reasonable to suppose. The broken human bones previously referred to suggest cannibalism, perhaps a rite rather than a regular custom. This would further strengthen the suggestion that settlements along the coast present a type of Indians inferior to those of the interior, that is, those living further back on the Penobscot, the Kennebec and the lakes.

The antiquity of the heaps cannot be exactly stated at present, although Loomis and Young offer an interesting comment upon the age of shell-heaps.* Observations made at New York City, they say, show the rate of subsidence of the Atlantic coast at that point to be about half a meter a century, but they think it is nearly a meter per century in Maine, and cite the tide mills, which were in common use in early times and cannot be maintained at the present time. Taking these and other factors into consideration, they conclude that the heaps had been not less than three hundred to five hundred years in accumulating before the advent of white men, now nearly three centuries ago. The writer sees no valid reason for supposing that a few hundred years span the age of all shell heaps in Maine. Several of our larger clam-shell deposits may date back a thousand years, for aught we know to the contrary.

**Loc. cit.* p. 22.



FIG. 106. Two bone handles, three broken pipes and an unknown object in the center. S. about 3-5.



FIG. 107. A thin stone slab, smooth and slightly hollowed out, almost mortar-shaped but rather too small for food grinding. Possibly a stone on which meat was cooked. S. 1-3.

PART IV.

INTERIOR VILLAGE SITES AND OTHER REMAINS.

Our term "interior village sites" is a general designation used to cover all sections of Maine and parts of the coast-line not previously described. We shall devote considerable space to this subject, since aside from the Kineo region, the investigators in the Maine field have confined their observations to sites near the ocean and to only a few of those. Our surveys spent much more time on long trips into the interior than we did upon the coast. It was thought advisable to explore the unknown regions of the state thoroughly, in order to ascertain the extent of the Red Paint People's culture, the relationship between them and the shell-heap dwellers, the character of other sites, and if possible to obtain light upon a score of lesser problems which need not be set down on this page.* In fact, aside from the work done at Moosehead by McGuire and Willoughby, at Damariscotta by Putnam, and at Chesuncook by Marks who published no paper, there is nothing in the records to indicate that other observers have paid attention to the archaeological remains in a region which is as large as Connecticut and Massachusetts combined.

We shall follow our field notes, with certain changes and not in chronological order. Beginning with south-western Maine and working northward and eastward, we shall treat of each river valley or region as a whole, regardless of the year in which it was examined or the fact that two or three surveys may have been in the sector at various times. Western and south-western Maine are the only large parts of the state in which we did little work. This should be noted here, for in future years, if other observers examine the country between the Androscoggin and the New Hampshire line, they will probably find some interesting sites not here noted in that region as well as in the Rangeley and Machias regions and others in which we did not attempt thorough explorations.

The writer had looked over the Portland district before beginning our work, and found some shell heaps there, but as they appeared like those

* In considering village sites or habitations of the Red Paint People, I have always thought that Lake Alamoosook might properly be considered the center of their culture, since there are three cemeteries on the shores of the lake beside two at Orland village and two at Bucksport, making a total of seven cemeteries within nine kilometers of the outlet of this lake. At Alamoosook and on both sides of the outlet were numerous signs of Indian camps, such as broken hatchets, chips, spalls, burnt stone, crude plummets, etc., but little or no pottery, to my knowledge, has been discovered. A large amount of trenching should be done about the shores of the outlet, for through such detailed work it might be possible to identify a settlement of the Red Paint People.

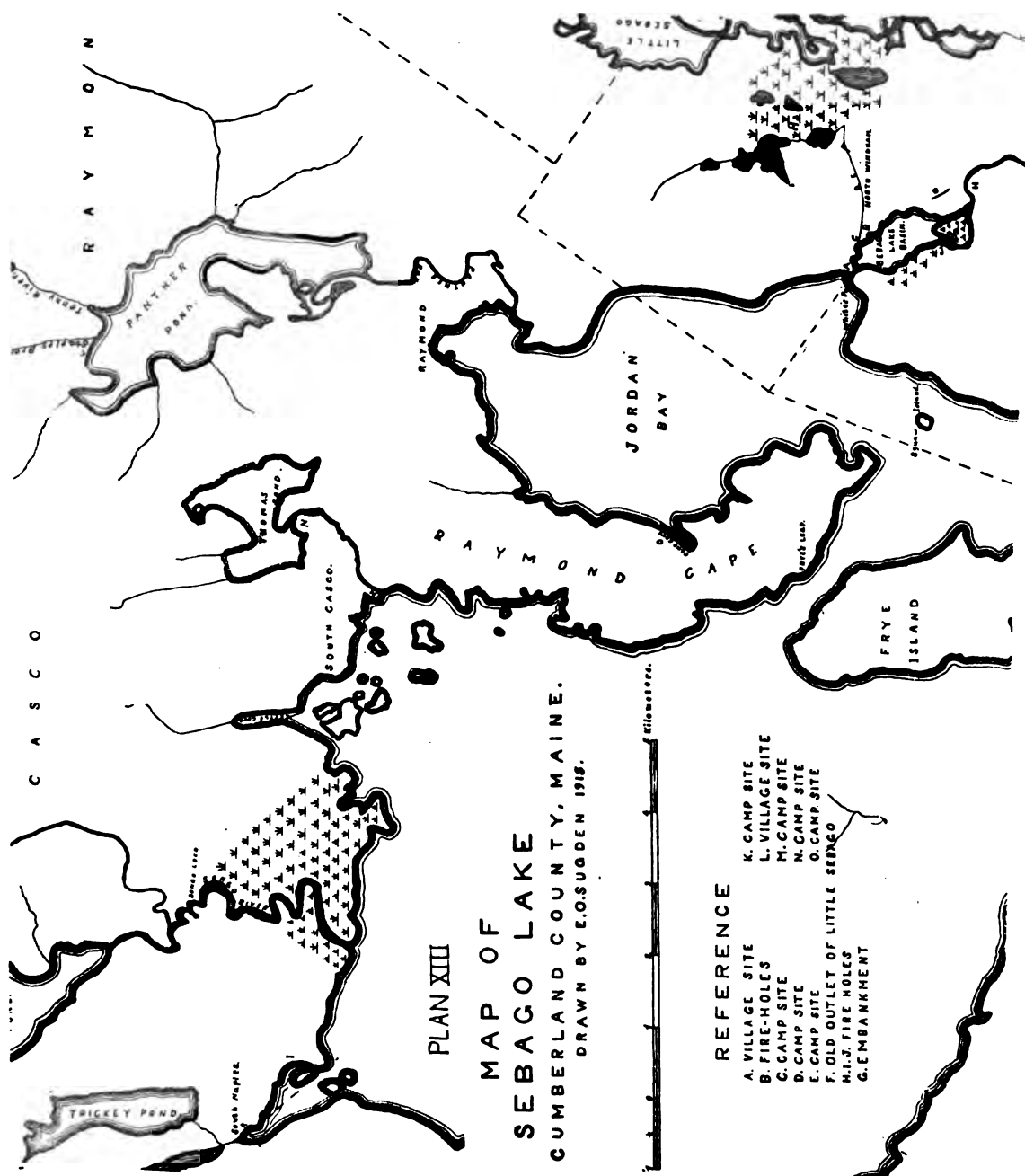
further up the coast, he accepted the descriptions furnished by Hon. James Phinney Baxter, President of the Maine Historical Society. The collections of the Society contain some material from these sites, and it was not thought necessary for us to carry on further explorations there. When we conduct researches in the rest of New England, we may ascertain whether the Maine Red Paint culture extended into New Hampshire and adjacent region.

Mr. James C. Sawyer, Treasurer of Phillips Academy, on several occasions told the writer of this report about Indian sites near Durham and Dover, N. H. This is the region drained by the Salmon Falls River and was famous in Colonial times because of many attacks by Maine Indians on the settlements here. In 1917 we spent two or three weeks in the Salmon Falls country and also along the coast and found a number of small shell heaps which are shown on our map of York County, Maine. This map, however, is not reproduced, since only a few sites were discovered. On Oyster River, not far from Mr. Sawyer's residence in Durham, New Hampshire, is a small shell heap composed exclusively of oyster shells. This had been so much disturbed by previous explorers that we were unable to find more than a few specimens. They do not differ from the ordinary shell-heap forms.

On a long point of land lying east of Dover, and between two branches of the Salmon Falls, the owner, Mr. Montgomery Rollins of Boston, had found several specimens. We ascertained that this ridge was chiefly composed of pure sand and we put down many test pits but were unable to find a cemetery. We did find one grave in the edge of a sand pit and took from it a narrow gouge, two other gouges, and a problematical drilled form similar to the wide tubes common in New York State and Ohio. There was a faint discoloration of the sand where these objects were found, but no deposit of red ocher. The specimens are reproduced in fig. 108. The grave at Rollins's place may or may not be of Red Paint culture. It is reasonable to suppose that the Red Paint natives went on war or exploring expeditions west of the Kennebec, and this may give an explanation of the single burial.

The survey spent a week in the Ossipee region but found little to indicate any permanent Indian occupation.

At The Weirs, the outlet of Lake Winnepesaukee, Governor Winthrop reported a considerable Indian population at the time of his visit, two hundred and fifty years ago. Lake Winnepesaukee was an extensive spawning bed for shad, salmon, and other fish, and the Indians built weirs at this place and trapped large numbers of fish which they dried for winter use. Ten years ago it was possible to trace where these weirs had been located, as some of the stones which originally were spaced apart from bank to bank still remained in their old places near the shore. One of the largest Indian villages in New England was located at The Weirs and extended for more than a kilometer above and below the outlet.



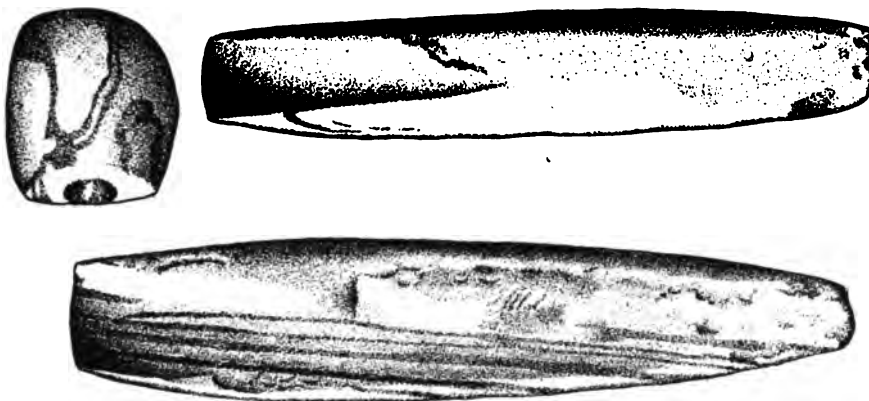


FIG. 108. Gouges and a problematical form from the Rollins site, N. H. S. 1-2

I had visited The Weirs years ago and ascertained that many specimens had been taken from this place by private collectors and agents of museums. In 1917 we found a large camp site extending on both sides of the outlet and down the stream for some distance, but as the whole place is now occupied by summer cottages it was difficult to secure permission for proper observations. The Boston & Maine Railroad, however, owns a considerable part of the site and the officials kindly permitted explorations. Some two hundred scrapers, projectile points, and pottery fragments were secured during the test-pit operations on their land. Later we should examine the Winnepesaukee region more thoroughly.

The Saco valley also was scouted by two or three of our men but they found little, and we offer no observations other than that there are probably small villages on the Saco. More work should be done about the entire Saco valley, which is practically unknown.

THE SEBAGO REGION

In April and May, 1913, Mr. Sugden spent over five weeks about Lake Sebago in company with Mr. W. Scott Rolfe of Casco, looking for sites and studying the region. It is to be regretted that the large map he drew cannot be inserted here in full. Plan XIII, however, presents that part of Sebago and adjacent territory in which he found a number of sites. A large collection of Indian relics was made many years ago by Mr. Rolfe, and another by Mr. E. A. Kennard of North Windham, who lives at the outlet on the eastern side of the lake. The latter has some six hundred specimens, all of which were found about Sebago. With few exceptions these appear to be the ordinary Algonkian forms common in New Hampshire and southwestern Maine. Neither Mr. Rolfe nor Mr. Kennard know of any cemetery, although one or two graves have been discovered. Most of the specimens have been found along sand beaches and about the outlet or on the sites indicated by the letters B, D, E, H, L of the map. A few are apparently Red Paint People types, such as portions of the long slate spears. Mr. Marks secured from Mr. Rolfe many years ago the polished slate knife shown in Fig. 109. This was drawn for our report by Mr. Willoughby's secretary, Miss Gleason, and is reproduced in full size. Few more carefully wrought specimens of Indian handiwork have occurred in the New England area. This and other unusual objects were found by Mr. Rolfe many years ago at Panther Pond on a sand ridge which might have been a cemetery. It is probably under water at the present time, since the level of Sebago Lake and its tributaries has been considerably raised by a new dam. There are many other objects from the Sebago region in the Maine Historical Society collection at Portland and numbers have been taken away by visitors and collectors.

Taking into account the camp sites found by Mr. Sugden and the great

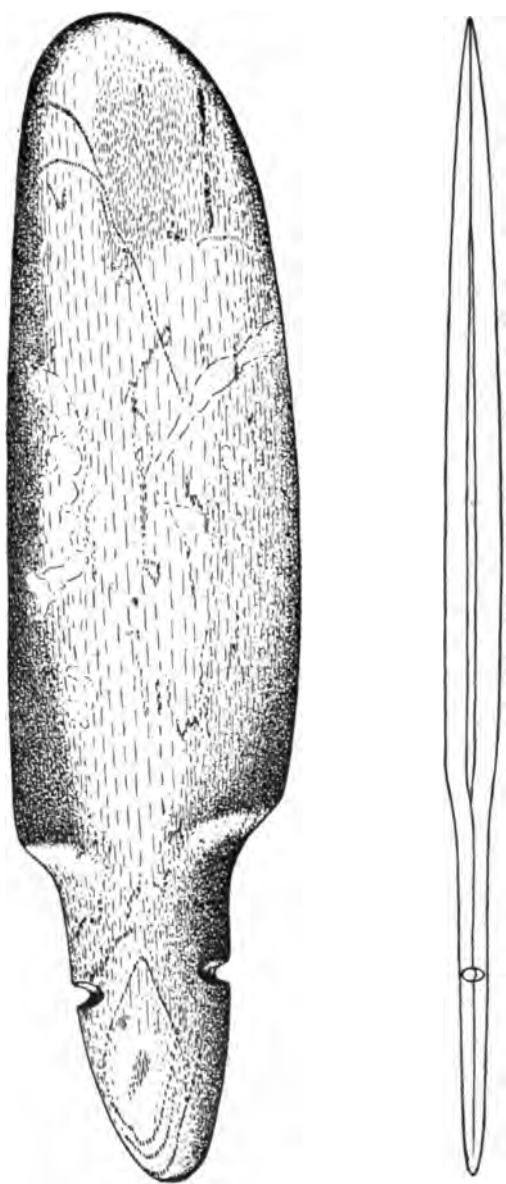


FIG. 109. Polished slate knife from Panther Pond, Sebago region. See p. 210. Size 1-1. Dark green, somewhat mottled.

number of "Indian cellars", or cache pits found in the region, we may infer that this was a favorite resort, or rather the site of a large village. From Sebago one could travel to the coast in a day and the hunting here in early times was excellent. The cache pits vary from one or two meters to at least three meters in diameter. In the pits is the usual charcoal and ashes and black earth, probably resulting from decayed corn and other foods.

Letter G shows a peculiar narrow embankment on the east side of the outlet, which stands nearly a meter high, on a level sandy stretch, a short distance from the lake. Mr. Sugden investigated this and found that it extended for about five hundred meters. Along the steep side, where the ground slopes down to the bed of the gully, is what appears to be a well-worn path, which is still used by trappers. The river bed is rocky here and in former times there probably were rapids. The path-like feature may have been a carrying place around those rapids. It looks like Indian work, although nothing else just like it is known in Maine. Mr. Sugden interviewed the owner of the property, who stated that old residents always claimed the embankment to be of Indian origin. There are fire pits just back of it, and the proprietor says that the land has never been ploughed.

Mr. Kennard said that many years ago before the new dam was built several slate spears were found at the edge of the lake. These lay with the points in one direction. Mr. Sugden saw one of them in the possession of a local collector living at Raymond village and states that it is of the same form as the well-known Red Paint type. These, with the interesting knife from Panther Pond and some long, narrow gouges and a few hatchet blades, would indicate that the Red Paint People may have got as far west as Sebago, but since Mr. Sugden's careful researches during the period of over a month resulted in finding no cemetery, we did not deem it advisable to continue further work. It is suggested that some other observer in the future revisit the Sebago region and spend more time there.

THE ANDROSCOGGIN REGION

Next to the Sebago region lies the great Androscoggin valley. When the Connecticut River survey was run in 1919, several of us visited the Megalloway and Diamond waters, which are the upper reaches of the Androscoggin, but did not find any Indian sites. In July, 1920, some of our party made the trip down the main river from Berlin Mills in New Hampshire as far as Auburn, and found some remains.

Along the upper Androscoggin are several small village sites, usually placed near the mouths of streams tributary to the main river. Not far from Bethel is a rock shelter in which occur ashes, charcoal and other signs of Indian occupation. At Mechanic Falls on the Little Androscoggin many stone implements have been found, but as the modern village covers the Indian site, excavations cannot be satisfactorily carried on. Lake Auburn

was once inhabited by numbers of Indians, and chips and burnt stones are still numerous on the beaches. On Androscoggin Pond, near Wayne, are many signs of small villages or camps, and several slender gouges and two long pendants have been found there but we could not discover a cemetery.

All that we were able to ascertain by field operations and study of the collections was that the larger communities lay about Auburn and on Merry-meeting Bay, at tide-water. The region of the Rangeley Lakes, which feed the Androscoggin, has not been explored; there may be Indian sites there, but it seems rather too far north for villages of any size.

Several large collections have been made in the Auburn district, Mr. Penny's in the Maine Historical Society's cases at Portland being one of the most extensive. The proportion of rough and crude material is unusually high. There are numbers of very rude celts and axes which are apparently finished objects but are so poorly manufactured that they seem useless as tools. These seem characteristic of the Androscoggin area.

THE KENNEBEC VALLEY

At the main or eastern outlet of Moosehead Lake there is a large dam and timber operations have been extensively carried on there for more than fifty years; hence there is little Indian "sign" remaining about the outlet. For some kilometers down the Kennebec from this point the stream is filled with boulders and ledges, making rapids and falls, and the Indians must have carried their canoes some distance from the lake before embarking again. We find traces of small camps here and there but there is no evidence of any large village until the mouth of the Spencer River is reached, where there appears to have been an encampment near the junction. Along the main stream to the mouth of Sandy River there are a few sites, and careful search of the knolls back of such spots might reveal an occasional cemetery. At Farmington, some distance up the Sandy, is another encampment. The map of Somerset County showing these sites is not reproduced in this report but is on file, like all other maps compiled by the expeditions.

The first really large Indian site as one descends the Kennebec is that at Norridgewock. Here Father Rasles had his mission, and from this Indian town raids against the Massachusetts Bay Colony were organized. The village was destroyed by the colonists in 1724 and the heroic priest killed while defending his wards. That Norridgewock was the site of a still older town and probably inhabited by Algonkins in prehistoric times, seems quite evident. The burial grounds have been completely ransacked, and when our survey visited the spot in 1920 we found that someone had preceded us and that numerous pits had been dug for some distance up and down the river.

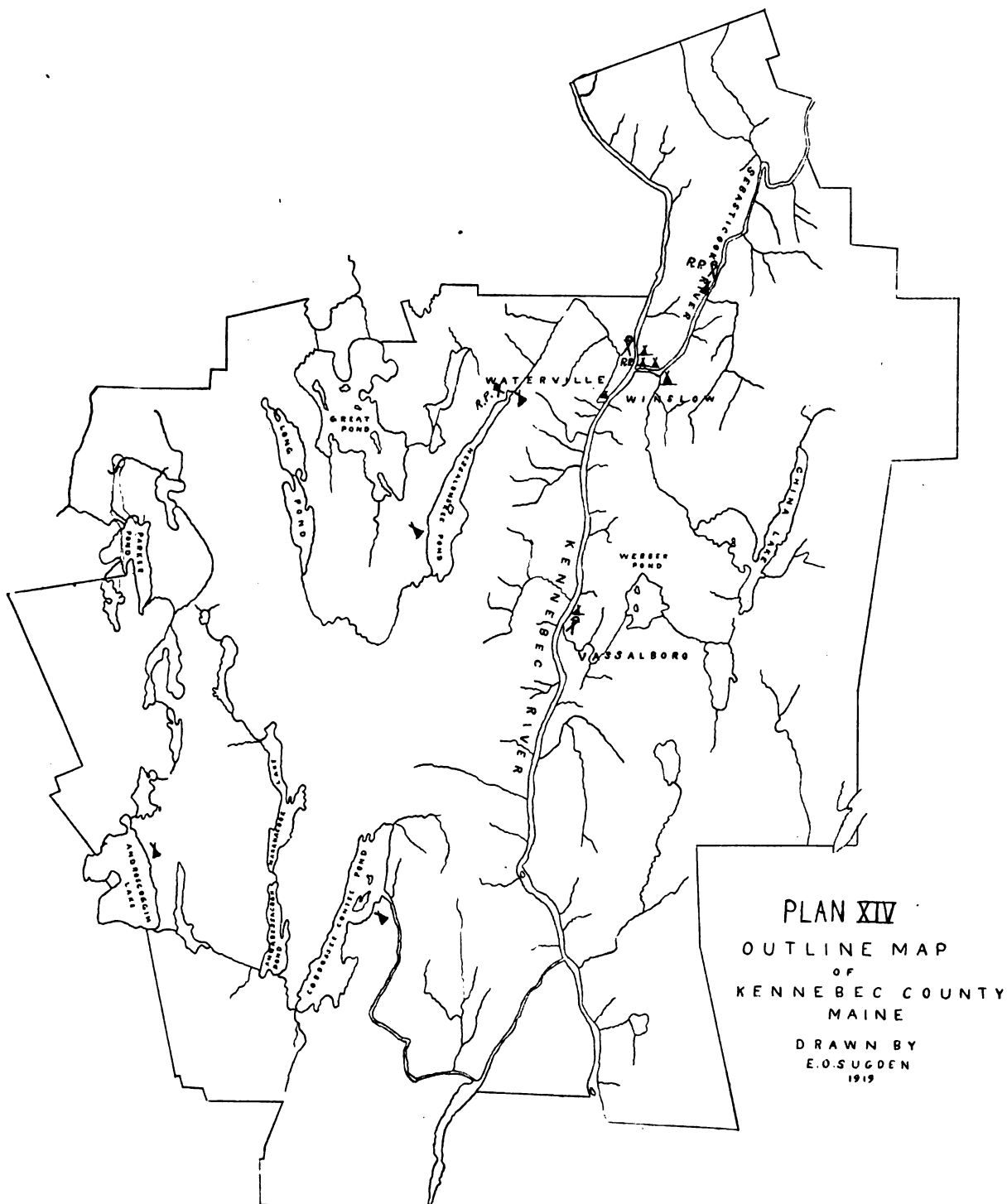
In the Waterville sector, in addition to the Red Paint People cemeteries already described,* there are numerous indications of Indian villages. The

*See p. 95.

Sebasticook valley from Moose pond to Waterville was carefully examined and a number of camp sites located. Considerable pottery has been taken from the river bank a kilometer above Lancaster's farm. Two burials were discovered in Winslow upon the ridge back of Lancaster's saw mill, one of which was opened by us and the other by Mr. Lancaster. Both skeletons were flexed; one had a necklace of small beads about the neck, but the beads were few in number and of the ordinary shell-wampum type. No other burials could be found along the river by our parties, although we are convinced that there are more. A number of wigwams once occupied the low meadow flanking the river below Mr. Lancaster's house and many rejects and chips, together with knives and one or two stone cutting tools, were secured by us.

China Pond, some eight kilometers south east from Waterville, has low and sandy shores about the outlet. A considerable village was once situated here and local collectors have many specimens of the common Algonkian types. We dug in various places and found some large ash pits on the east side of the outlet on the Cates estate, with the usual bones, chips, etc. in the ash pits. We cruised the shores of China Pond but did not discover a cemetery. The place should be more carefully examined at some future time.

The entire region lying about Waterville is interesting, and it has been suggested that when the State of Maine archaeological survey begins operations, it concentrate on this sector lying between Norridgewock and Augusta. A very large site occurs at Riverside in Vassalboro, near the mouth of Webber stream, which drains Webber Pond. About this pond many objects have been found and there are several collections in the possession of cottage owners. Dr. W. S. Hill of Augusta, who accompanied us on two or three trips, has in his large collection many objects from Webber Pond and the Riverside site. The Indian village at Riverside lies on the east side of the Kennebec, about twelve meters above the water, and must have extended for nearly a kilometer north and south. There is a large sand ridge at the north end where it is said a cemetery existed in early times and local people took many skeletons from it. We camped at Riverside for a week and put down hundreds of test pits, finding many fragmentary bones but no skeletons and few artifacts. The place seems to have been thoroughly ransacked by collectors from Waterville. There are large ash pits in the triangle between Webber stream, the railroad track, and the high bluff above. A force of six or eight men would be able to trench this area for two or three hundred meters, and examine the ash pits carefully, and thus the arts of the villagers could be reconstructed. Some one has stated that the Jesuits had a small mission on a high knoll near the residence of Mr. Sturgis, the present owner of the land.



MOOSEHEAD LAKE

In July, 1912, we visited this large and beautiful body of water and by means of motor boats examined about fifty places around the shores and excavated at twenty-one different points. It would have been impossible to thoroughly explore so extensive a shore line in less than one full season, as it is stated that the circumference of the lake including all irregularities of shore line, is more than five hundred kilometers. The water at that time was unusually high. The dam at the outlet has raised the water three meters or more, so that all the low lands and favorite camping places of the aborigines, either ancient or modern, are covered, and only those sites lying back from the lake or on knolls, are available for study. October and November, at low water stage, are the best months to visit Moosehead.

We do not present a detailed map of the Moosehead region for the reason that our observations were not complete. From indications it is clear that there are a number of camp sites, rather than village sites, about the lake; one is at Spencer's narrows, another at Stevens' sporting camp, and there was a large village on the shore across from Mt. Kineo which has been described by Mr. McGuire in the passage cited below. Probably implements would be found near the mouth of Roach River, and on the shores of Lily Bay and on the mainland opposite the lower end of Sugar Island.

On the western shore of Deer Island, at a point called "the Narrows," we found great quantities of the Kineo stone and a number of spear points, arrow heads and knives. Many of these were discovered in the edge of the lake in twenty centimeters or more of water.

Where the Mount Kineo hotel is located there was a small prehistoric cemetery of the Red Paint People. Most of the graves were destroyed when tennis courts were constructed some years ago. The contents of several were on exhibition for some years in the lobby of the hotel; a number were carried to Boston and a few are in the Peabody Museum.

Our entire party spent some time inspecting the large talus around the base of Mt. Kineo. We dug several deep pits in the accumulated debris and found a number of turtlebacks, chips, flakes and spalls, but as McGuire and Willoughby had both investigated the Moosehead region in previous years and published the results of their studies* and as our observations led us to agree with the conclusions of both, we followed our custom not to carry on further researches where good work has already been accomplished, and the Survey moved elsewhere.

A portion of McGuire's excellent paper is here inserted.**

"Mt. Kineo rises 1700 feet above tide, and 1000 feet above the lake. The whole mass appears to be composed of a felsitic rhyolite,

*C. C. Willoughby, *American Naturalist*, Mar. 1901, opp. 213-216. 3 pls. J. D. McGuire. *American Anthropologist*, n.s. X, 1908, pp. 549-557.

***Loc. cit.* p. 551 ff.

erratic boulders of which are widely distributed throughout Maine, New Brunswick, and even beyond. The name Kineo signifies 'great eagle' in the Abnaki language, probably from some fancied resemblance of the mountain itself, or of some part of it, to the bald eagle. On the southern side the mountain is about a mile in length, and has a talus from two hundred to three hundred feet in width, the slope of which is composed of small fragments intermixed with larger masses of the rock that have fallen from above. On the precipitous southern side of the mountain are seen numerous bald patches of the rhyolite in places where the cliff is too precipitous to support vegetation or where the frost has loosened the stone.

"A visit extending over two months during last spring and summer [1908] at the eastern outlet, offered unusual opportunities for archaeological investigation of local conditions, owing to an exceptional period of drought.

"During the latter part of May and in early June the water of the lake was at an unusually high stage, no beach being anywhere visible; in August and September, however, owing to the lack of rain, the depth of water was lowered as much as an inch a day. Due to the very gradual shelving of the bed of the lake, a rocky beach developed and finally attained an average width of a hundred feet or more. On the beach and in the immediately adjacent water numerous aboriginal implements in various stages of development were found. Of four hundred specimens picked up, all but four are of rhyolite; associated with these were numerous fractured pieces, as well as boulders, many of which latter had been purposely broken in order to test their suitability for producing spalls for subsequent flaking into implements. The rhyolite boulders are generally of small size when compared with the boulders of primary rocks, which occur in infinitely greater numbers, the former weighing tens and the latter hundreds of pounds.

"The color of the rhyolite in the bed-rock is dark green, but along the shores of the lake and in the Kennebec river it has weathered until it is almost white. In a number of cases implements taken from the water were light yellow on their upper surface whereas the under-side was light gray or green, as though they had lain unmoved for centuries. The number of rhyolite boulders lying along the beach would indicate that erratic blocks have been more extensively employed for implement-making than has been supposed.

"The specimen-yielding area is limited to a few hundred yards along the lake shore, beginning a hundred yards from the dam on both sides of the outlet; and to less than fifty yards of the



FIG. 110. The Felsite Cliff, at Mount Kineo, Moosehead Lake.

beach at Squaw point, a mile from the outlet. The uniformity in material and workmanship being similar, the collection is treated as homogeneous.

"On the beach southeast of the Outlet Hotel, and two hundred yards from the point where most of the implements were found on that side of the lake, and away from other pieces of the rhyolite, a cache of twenty-nine pieces was unearthed, the specimens ranging in color from almost white to a dark gray. The lighter color being uppermost, it appears likely that the weathering is due to light rather than to chemical action of the water.

"Practically all these specimens exhibit more or less artificial work. The largest one in the cache measures about seven inches in extreme length. The cache was situated within a natural circle of boulders, and could have been found readily by the owner, who had piled the implements so neatly one upon another."

McGuire describes his artifacts and rejects in detail. They are of the usual quarry forms, ranging from turtle-backs to completed blades and finished spear and arrow points. He found quartz broken in angular fragments upon the beaches, but it was of a texture not suited to the manufacture of implements.

Having described the quarry and shop-site material, he turns his attention to the use of fetishes among the Maine Indians, and illustrates a natural concretion which has been artificially worked at the top. We found several similar stones at various places in Maine, larger than the one figured by Mr. McGuire. From their appearance, or the circumstances under which they were discovered, we conclude that such stones were of value to the Indians. Two or three in our museum are sufficiently large to be considered idols or manitous. One in particular is 47 cm. in height, 35 cm. wide at the base and 15 cm. by 18 cm. at the top, and weighs about sixty pounds. It was found on the Passadumkeag village site at the mouth of Passadumkeag stream. McGuire says of these stones:*

"Such fetishes were sometimes painted to strengthen some fancied resemblance to the owner's tutelary, or were otherwise marked by adding a mouth, an eye, or other feature. Schoolcraft describes certain 'image stones' which 'the native tribes who occupy the borders of the great lakes are very ingenious in converting to the uses of superstition, such masses of loose rock or boulder stones as have been fretted by the action of water into shapes resembling trunks of human bodies, or other organic forms. There appears to have been at all times a ready disposition to turn such masses of rude natural sculpture, so to call them, to an idolatrous use.' Of these figures Schoolcraft illustrates five specimens.¹

**Loc. cit.* p. 556.

"1. The Indian in his Wigwam, p. 290, 1848 "

"Lalemant, referring to Dreuillette's conversion of the Abnaki on the Kennebec, in the Jesuit Relation of 1647, says that one of the evidences that the Father obtained was that the Indians 'should throw away their manitou, or demons, or fantastic charms. There are few young men among the savages,' he says, 'who have not some stone, or other thing which they keep as a dependence upon the Demon, in order to be happy in the hunt, or in play, or in war. . . . Those who had some of these charms, or manitous, drew them from their pouches; some cast them away, others brought them to the Father.'²

THE PENOBSCOT WATERS

Omitting the mouth of the Penobscot, about which are small shell heaps and occasional village sites, and ascending the river to within eight kilometers of Bucksport, there is an Indian site of some size on the west bank of the river at a place known as Sandy Point. In August, 1914, the survey went down there from Bucksport and spent about a week in excavating along a sloping sand ridge. Eleven skeletons were discovered within a space ten meters in extent, but all were very much broken and decayed. They lay not more than thirty-five or forty centimeters below the surface. These were exceedingly interesting burials in that they seemed to mark contact between Indians of the stone age and Europeans. There were great quantities of ordinary shell wampum strewn over four of the bodies. The exact number of pieces has not been determined, but as there were several quarts and the beads are small, it may be assumed that there were originally between 20,000 and 25,000 of these beads. From the position of some of them we conclude that they were strung on thongs and worn as necklaces and that others were used in fringing deerskin jackets or were woven on belts. A few large shell beads were found with the smallest skeleton, that of a child. With one skeleton were two rude flint knives and a large, rough, iron axe weighing at least seven pounds. It seems too heavy to have seen service as a tomahawk and was probably a camp axe. Large iron kettles were placed over the heads of two of the burials and these have decayed except the handles and portions of the thicker upper parts. There were many cylinders of brass but no native copper. Two of the bodies had been wrapped in beaver and moose hides and there were traces of bear skin. Where the hair came in contact with the brass enough of it was preserved to permit identification. It is to be regretted that there are no photographs of these interesting burials. Our field camera was in Bucksport being repaired at the time. There was a summer school near Sandy Point and many persons gathered to witness the survey at work, including a teacher who claimed to be an ex-

"2. Jesuit Relations and Allied Documents, vol. XXXI, pp. 183-195."

pert with the camera and took numerous photographs for us, but either his camera was defective or he was not familiar with photography, for we were unable to secure any pictures from him. This is mentioned as one of the few instances in which it was impossible to secure good photographs of our explorations.

As one ascends the river further Verona island, several kilometers in length, is passed. On the east side of this island the channel is narrow and the stream which drains Alamoosook Lake enters opposite the head of the island. As has been stated on page 21, the village of Orland is located at the head of tide water on this stream, called the Orland or Narramissic river, and the spot was a favorite resort of the Indians, who had a considerable village there at one time. Passing on up the river toward Bangor, one finds few sites until Bangor itself is reached. From all accounts, Bangor was probably the Norumbega of the early voyagers. The city, covering as it does a considerable space, has obliterated all Indian traces except above the first dam on the Penobscot, where exists the famous Bangor Pool. This is head of tide water and has been a famous fishing-place for salmon from earliest times. When planting gardens in Bangor itself, many objects have been picked up by land-owners. From the pool up to the Penobscot Indian village at Oldtown, there are a number of sites, one of which belonging partly to the Red Paint culture has been described by Mr. Smith on pages 137 to 146 above.

The Indian Island at Oldtown, on which is the village of the modern Penobscots, is a large tract of land. Numerous stone implements have been found there, among them Red Paint People types, and many of the Indians have specimens which they have found in their gardens and fields, but for some reason they will permit no explorations, although repeated attempts have been made on the part of explorers to secure permission. The writer of this report interviewed the leading men of the tribe and explained the nature of our work, but was unable to move them from their former decision. These Penobscots are very tenacious of their tribal rights and permit no white men to remain on Indian Island over night.

Further up the river there are other sites, one of some size being located on the west bank at the mouth of a stream about two kilometers below Passadumkeag. Much pottery occurs here.

OLAMON STREAM

Some interesting information about the meaning of Indian place-names is contained in a letter written to the Rev. J. Morse on Nov. 28, 1823, by Mr. Moses Greenleaf, who was familiar with the Penobscot Indians. This letter, with the title "Indian Place Names of the Penobscot and St. John Rivers," originally appeared in the first "Report of the American Society for Promoting Civilization and General Improvement of the Indian Tribes

of the United States" (New Haven, 1824), and has been re-printed by Mr. Edgar Crosby Smith in his "Moses Greenleaf, Maine's First Map-Maker" (Bangor, 1902, pp. 120-125).

In our journey up the Penobscot we paid particular attention to islands, mouths of streams, and other features mentioned by Mr. Greenleaf. For instance: Bos-que-noo-sik Island, "Burying ground for Mohawks"; Ta-la-la-go-dis-sik (Webster's Island), "Painting place for squaws"; Bos-que-nuguk (Broken Island), "Burying Ground"; and lastly Olam'man (Olamon) stream, "Place where paint is found." However, although we carried a crew of ten men, we were unable to find any traces of burials, either Algonkian or Mohawk, on the islands; but we were especially interested in Olamon Stream because we hoped to find there the source of the red paint or powdered hematite. A thorough search of the region was made, especially near a point some distance back from the main river, where falls occur. There is a ledge here in which are numerous depressions. The older residents of Olamon claim that in the early days a good deal of red paint was dug up along the ledge and taken away. Indeed we were told that a house and a boat had been painted with it. The Indians also may have carried off great quantities of it in historic times.

We carried on excavations here for several days and in places found areas two to four meters in diameter where the soil was quite red. Mr. Ralph Lord, one of my men who is experienced in timber work and woodcraft, is of the opinion that discoloration of the soil results from the burning of very heavy white pine. In this particular place the virgin forest was composed of large white pine and the roots in burning would discolor the earth. Other tree roots do not have this peculiarity to the same extent as those of white pine, Mr. Lord contends. At first Mr. Smith and I were also of this opinion, but after considering the matter and finding that the red earth does not extend in narrow strips or downwards but is continuous, we thought it might be due to the presence of soft hematite. However, we found no earth that was bright enough to compare with the Katahdin paint or ochre.

This illustrates how frequently popular traditions either are not reliable or relate to what has long since disappeared.

PASSADUMKEAG

Passadumkeag was a large Indian site in the historic period and is frequently mentioned by Francis Parkman and other writers. The colonial records also refer to expeditions from both Passadumkeag and Mattawamkeag organized by Indians and French against the white settlements of the Massachusetts Bay Colony. Several of the citizens of this modern village have specimens found on the flat where the town is now located. Two or three of our expeditions stopped at Passadumkeag at various times when as-

cending or descending the river. In addition to the Red Paint cemeteries already described,* we found indications of a large Indian village site at the mouth of Passadumkeag stream. During the work of the first expedition, in 1912, a large fire pit about 1.3 m. in diameter was discovered on the land of Mr. Leonard on top of a large bare knoll which commands a good view of the river. It contained charcoal and ashes, one layer of charcoal being over 5 cm. in thickness, and in the bottom of the pit the charcoal was 11 cm. thick. The base of the excavation of the fire pit was somewhat less than a meter below the surface of the knoll, and nearly a meter below the ash pit were fragments of a human skull. We have never in any other of our explorations found a burial so far below the surface. No other large fragments of bones were found but there were traces of decayed fragments. The only objects accompanying the burial were a small arrow point and a little ocher rather dull brown in color. Twenty-one pits were sunk in this knoll but no more burials or objects were discovered. Ashes and charcoal occurred frequently 20 to 40 cm. below the surface, as if the knoll had been greatly disturbed at some time.

THE PISCATAQUIS

At Howland, eight kilometers above Passadumkeag, the Piscataquis river comes into the Penobscot from the west and there is a large Indian site at the junction of these streams. Many objects are picked up there each year but our party was unable to discover a burial ground.

The Piscataquis river played an important part in the annals of Indian history in Maine. On the north branch, Pleasant river, is located Katahdin Iron Works, the source of the red paint. The south or larger branch drains Lake Sebec, the shores of which were thickly inhabited by Indians. In 1915 our expedition moved to the mouth of the Piscataquis and worked upstream. As the men proceeded with the canoes up the south branch, Mr. Smith and the writer decided to visit certain hematite outcroppings near Katahdin Iron Works, as neither of us had ever been at that place.

Mr. Smith informed me that a French engineer a century ago reported that in Williamsburg township, which is the Katahdin of today, occurred soft powdered hematite of such fine character that it was used for paint without preparation, and that it is one of the few places in the world where such fine paint occurs. Several buildings at Katahdin Iron Works were painted with this red ocher thirty-two years ago and have not been repainted, and notwithstanding the severity of winters in northern Maine much of the original color remains.

We found the outcrop of powdered hematite on the surface along the foot of a high elevation or long ridge about a kilometer from the small settlement of Katahdin Iron Works. (See Fig. 29). Early white travelers

*Hathaway's, pp. 48-56; sand pit, p. 88.

in the region apparently found the Indian diggings and some observed the numerous iron nodules and boulders; hence Katahdin Iron Works sprung into existence and flourished until the Pittsburg and other western fields were developed. There are a dozen or more large furnaces still standing in the little valley along Pleasant river.

Returning to our party with all that we could carry of both yellow and red ocher, we found that they had made several discoveries. At the mouth of Sebois stream, under a deposit of edgings and slabs from a saw mill, is a village site over one hundred by two hundred meters in extent. Here we recovered from a short distance below the grass roots two hundred chipped objects and some broken pottery. None of it occurred deeper than thirty-five centimeters from the surface. An unusual feature of this village was the fact that scrapers predominated. Fully half of all material found consisted of oval and flake scrapers, but none of the notched or hafted chipped scrapers were observed.

Two or three years later three of us visited Katahdin Iron Works again and looked very carefully for Red Paint cemeteries in the vicinity, but the white people's operations have been extensive and all traces of Indian excavations have been obliterated. Mr. Smith and I had seen a collection in a drug store at Milo which came from the shores of Ebemee lake, a few kilometers from Katahdin Iron Works. The collection contained the Red Paint People type, but the owner of the site did not wish to have us carry on excavations and so the cemetery is still unexplored.

LAKE SEBEC REGION

In 1917 we visited the Sebec region, also drained by the Penobscot. The water was so high that we were unable to examine the sites which had been described to us by Mr. S. J. Guernsey of the Peabody Museum, but judging from the amount of archaeological material in the hands of local collectors, Sebec was one of the great Indian centers in the State of Maine.

After a careful inspection of the Sebec country, we came to the conclusion that the great quantities of powdered hematite brought from Katahdin Iron Works by the Indians, and also much of the felsite from Mt. Kineo, were taken to the Penobscot through the Piscataquis region rather than down the Kennebec. As has been stated, there is very bad water for some distance below Moosehead in the Kennebec. We are of the opinion that the Indians loaded their canoes at Kineo with felsite, paddled to the south end of Moosehead, and then carried to Wilson Pond, a distance of about five kilometers. From thence through Trout Pond and Long Pond to Sebec Lake there are short portages and at certain seasons of the year very little carrying need be done. From Sebec Lake down Pleasant River and the Piscataquis to the Penobscot was an easy journey. The powdered hematite would have to be carried on the backs of the Indians down the trail along

Pleasant river to near the Piscataquis before it was possible to navigate in canoes. We do not think the Kineo felsite was transported down the West Branch of the Penobscot, as that would necessitate a long transportation at North East Carry and also portages around the many falls of the West Branch.

THE MATTAWAMKEAG RIVER

In the latter half of July, 1915, we went from Castine to Island Falls, at the head of Mattawamkeag West Branch Lake, where Mr. "Bill" Sewall has a large camp. Mr. Sewall will be remembered as President Roosevelt's guide for many years in the Rocky Mountains and also in Maine. After examining the shores of the lake, we proceeded by canoe down the Mattawamkeag River to its mouth. All along we found traces of Indian camp sites, with a few stone hatchets and celts but nothing indicating permanent occupation. Some distance above Kingman, at the junction of two branches of the river, was a rather extensive village site, but it was difficult for us to work there because a heavy growth of spruce and saplings covered the ground and our time was limited. While descending the last ten miles of the Mattawamkeag below Kingman we had great trouble to negotiate the gorge where occur the famous Gordon Falls, the Heath and Ledge Falls. River drivers are frequently drowned at this place and we found it necessary to lower our canoes with ropes. The outfit got through safely, however, and set up camp at Mattawamkeag, the famous Indian town at the junction of this river with the Penobscot. We had already visited and explored this place in 1912, and we stopped there again in 1918, but no trace of Red Paint cemeteries or of other prehistoric burials were found by any of the expeditions. Only a number of graves of later Indians were discovered.

Mattawamkeag is a delightful situation for an Indian town. The Penobscot flows southward with the Mattawamkeag entering from the south east. The water in both is pure and clear. South of the tributary stream and flanking the main river is a level bottom of rich soil and here the large Indian village was located, nearly half a kilometer in length. It was an ideal spot, as Mattawamkeag stream protects the east and north and the Penobscot the west approaches. The modern village is on the slightly higher land a little further to the east. North of the junction and on the right bank of the Mattawamkeag is a high ridge or terrace which slopes down to a narrow bottom of rich land bordering upon both streams. Here a smaller village was located. All burials seem to have been confined to the high ridge above this site.

Our survey of 1912 spent ten days in work at Mattawamkeag. We dug many holes on the flats near the river, both above and below where the Mattawamkeag enters the Penobscot, and also sunk numerous pits upon the ridge. The land where the larger historic village was situated and where

there was probably occupation in more ancient times as well, is now a farm owned by Mr. George Budge. Debris covers the flat for a distance of two hundred by three hundred meters. During the course of our work here we found ash pits but they contained little of consequence. We were able to secure over a hundred stone and chipped specimens, finished and unfinished, of the various kinds. They were all very much like the ordinary early Algonkian types.

On the low meadow immediately bordering the water on the north or right bank of the stream at its mouth, numerous deep test pits were sunk. These revealed two and in some cases three layers of burnt earth, fire-cracked pebbles and charcoal. Between these layers were bands of clear sand, seemingly river-silt. Charcoal was found at one spot one and a half meters below the surface. About one hundred meters from the Penobscot the land rises abruptly, reaching a height of twenty or thirty meters. Here also we dug extensively. There is a tradition among the local people that one of the Jesuit priests, after laboring for many years among the Indians, died and was buried on a high sandy knoll on the north east side of Mattawamkeag stream, and that the chapel bell was buried with him, the mission having been burned by the English from Massachusetts Bay, some time before. Whether this tradition is true, I am not prepared to say, but there are graves on the ridge, on land now owned by Mr. John McCain. They are all of early historic Indians.

Further work at Mattawamkeag did not shed additional light upon the question of occupancy. The village site, while extensive, covers the surface merely and below the plow-line no artifacts have been discovered. Those found, as stated above, are in no sense of the types taken from the red paint deposits. In its technique the Mattawamkeag site does not differ from those found elsewhere along the Penobscot, so far as a careful investigation on our part indicates.

Some extracts from the field notes follow:

"One pit yielded a fine grooved hammer of granite and parts of a flint lock gun.

"On the nearby bluff numerous pits and a short trench revealed graves. From the first of these were taken pyrites (?), a hammer stone and an iron grape shot. The place had been plowed. Further work revealed several batches of "color" but scarcely enough to class them as Red Paint People's graves. Two arrow points of polished slate were found, one connected with ocher and one apparently a stray. Positions: Point with rounded stem: E. 10° N., 50 cm. down, ocher 68 cm. down. Other point, N. 20° E., 50 cm. down. It is to be noted that both these points are of different type from any found at Orland. No large objects or unquestioned pyrites came to light. In one pit a handful of bone fragments

scattered over a considerable area in brown and reddish earth was found. These probably represent camp-site refuse and burnt earth. We found four interments. In two of these were fragments of human bones. There was a rusty flint lock in the edge of one of these graves but we did not think that the gun had been buried, else more of the barrel would have remained. Fragments of clay pipes of the early forms and one or two bullets were found during our explorations, also a piece of rusty sword blade. In one grave where the skeleton had almost entirely disappeared, there was a slate spear head of a different type from any found in the graves of the Red Paint People, and a natural formation, or water-worn stone, shaped somewhat like an animal. At another place in the lower grounds we dug up a large grooved stone maul or hammer. No grooved tools have been found in the Red Paint People graves."

Believing that no Red Paint People were buried on the right bank of Mattawamkeag stream, and not wishing to disturb the graves of the mission Indians, we examined other lands along the river.

In 1915 and again in 1918, when we were coming down the Penobscot, we stopped at Mattawamkeag and did more work; it was impossible, however, to find any Red Paint People's cemetery. On the west bank of the Penobscot opposite the mouth of the Mattawamkeag River is a level bench or terrace about two hundred meters in length. Here we found two large wigwam sites. These were carefully hand-trowelled out and we were rewarded by finding several hundred chips, small scrapers, arrow heads and broken objects, largely of jasper. We found no pottery and no large broken stone tools. There was considerable burnt earth but no fire stones. These two sites were apparently where large cabins had been placed, and appeared to be about eight or nine meters in diameter.

In 1918 we camped at the lower end of the large flat where the Mattawamkeag Indian town was located, and here we found another wigwam site on which were large numbers of pieces of chipped felsite and Kineo stone. It is interesting to note that on the west side, across the Penobscot, jasper predominated, whereas on the east side there was no jasper, or very little. Thus the natives living on one side of the river used jasper almost exclusively while the finds on the other bank indicate the use of another material. On the islands near Mattawamkeag or above or below, we were able to find very little evidences of occupation. We are told that ice and logs, in seasons when the river is unusually high, have damaged or reduced the surface soil. This may account for the scarcity of Indian "signs" on the low-lands.

Continuing up the Penobscot in 1915 we come to Medway where the East Branch and West Branch of the Penobscot join. Here was a large Indian site and we secured thirty or forty knives and spear and arrow points,

and some rude plummets and broken axes. There is also much pottery here and a number of ash pits. The place should be thoroughly examined.

Proceeding up the West Branch we soon came to Shad Pond near the present "pulp town" of Millinocket. Here the Great Northern Paper Company has built an immense dam and turned practically all the water of the West Branch into power to run a pulp mill. The West Branch bed therefore is nearly dry for some kilometers and affords splendid opportunity for searching. Yet, although the entire party walked up the bed of the river, we found little or nothing.

This is not surprising if one is familiar with the history of the West Branch falls. Formerly a large body of water poured through this little gorge. Millions of feet of timber from the upper lakes were run through the falls each spring. Often jams occurred at this place, and the West Branch falls were considered the most dangerous place between Bangor and Chesuncook. The jams backed up the water for some distance, and when the jam finally broke, the force of the combination — tens of thousands of logs and perhaps a crest of four to six meters of water — swept everything before it. Sand, gravel, stones — the whole mass — went into the deeper waters beyond. All Indian implements left along the shores of the West Branch falls except those dropped on higher land have long since been washed away. In fact the mill and forest owners in Maine have "changed the face of the earth". What Kipling said of the elephant Hathi is true of the Maine "timber king" —

"And where Hathi gleans there is no need to follow."

We established camp on the edge of Shad Pond where Millinocket stream enters, and spent several days in digging and searching up and down the West Branch. We found numerous indications of temporary camps such as great quantities of chips and spalls of Kineo stone, ashes of campfires, hammer stones and a few broken celts; also some pits or caches in which property had been stored; but nothing indicating the presence of a great camp site or burial place could be discovered. Fig. 111 presents a large ash pit found on the banks of Shad Pond in which the layers of charcoal and ashes are unusually clear. It was more than one and one half meters in width and a meter deep but contained no objects and its purpose must remain a mystery.

Up the West Branch between Millinocket and Chesuncook Lake are some encampments of Indian hunters and fishermen, and upon the sandy shores of Chesuncook Lake are evidences of the largest interior village north of Bangor. Mr. Marks was fortunate in being able to examine the territory before the great dams were built, and he has given me some particulars concerning the extent of this site. There was also a large burial ground near the southern end of the lake and from it Mr. Marks secured many of the polished

implements and ornaments now in the Andover collection. These are all Algonkian forms; there do not appear to be any Red Paint People types. A large bone fish hook, curved and barbed, was found by him on the beach. This is the only hook of that pattern from northern Maine known to me.

PITTSTON

From Chesuncook we proceeded on up the West Branch to Pittston Farm, a supply depot of the Northern Paper Company, which is well over toward the western Canadian border of the state. Here the river forks again and each branch is quite small. Remains of aboriginal occupation occur on both sides of the main stream and on the point between the north and the south branches. It was an encampment of some duration, for pottery is found, and we never obtain that on temporary hunting sites. There is, however, little evidence of any extended camp site proper; the place seems to have been rather a group of small shop sites for roughing out discs and "turtlebacks" from the "quarried" Kineo stone. It is but fair to state that the site showing most evidence of camp occupation could be but slightly explored when we were there in 1914 because it was covered by a heavy crop of hay, and that commodity is very valuable, since Pittston is far from railway connections and farms. Plan XVI shows the Pittston sites.

Site 1. This was on the right bank of the main stream, the West Branch of the Penobscot, at the Forks, and occupies the highest land in the immediate vicinity. Here were found some triangular and leaf-shaped blanks including one which was thirty-five by thirteen centimeters, very evenly chipped. The left object in fig. 112. Thirteen of these blanks, whole or fragmentary, were found at this site, all of them where the river bank, two meters high, had washed away leaving the gravel. One jasper perforator, two broken knives, and a broken arrow head were found, and also a few irregular Kineo blocks and numerous large chips. Immediately below the sod at one place was a layer of ash containing a few crumbs of bone and a little nest of pottery fragments. The large chipped implements are shown in figs. 112* and 113.

Site 2. This was near the westerly shore of the point between the Forks, next the so-called South branch. The finds consisted of a double handful of coarse Kineo chips occurring in a space about ten meters across among a dozen or so of boulders weighing from twenty to fifty pounds each. One quartz scraper was found but no other evidence of finished objects nor of rejects.

Site 3. This was on the left bank of the North branch not far from the junction. It was marked by a deposit of coarse Kineo chips in a little pocket

*NOTE: The long leaf-shaped blade to left in Fig. 112 is the largest recorded from New England. On examination I conclude that it may be a finished object and not a blank as is stated in the text.

not more than three meters across immediately below the sod. There was no sign of any finished objects or of rejects.

Site 4. This was on a flat-topped sand ridge about one hundred meters east of the bank of the West Branch proper and nearly parallel with it. The objects occurred immediately in the grass roots. It yielded six triangular Kineo scrapers, one chipped knife thirteen centimeters long, a broken celt, a small, square-end, broken chipped knife, and about two double handfuls of coarse Kineo chips. These objects were found in an area less than fifteen meters across. This whole sand ridge as well as the gravelly hill slope behind it was covered by an ash layer immediately below the sod. It was probably caused by a forest fire burning the wood mold, but this does not preclude the possibility that in some spots it may have been added to by camp fires. This ash layer has given a dark color to one side of most of the objects from sites 4 and 5.

Site 5. This was farther south, and near the river bank. The chips here were noticeably smaller than at the other sites. About sixty chipped objects were found, mostly broken square-end knives. There were two notched arrow points, whole. Two deposits of pottery fragments occurred immediately among the grass roots. They more than filled a large cigar box, mostly in small pieces. It is the heavy, coarsely tempered, punch-decorated, archaic Algonkian ware, similar to that found in the shell heaps at Frenchman's Bay.

A small deposit of Kineo felsite chips was found about half way between sites 5 and 6, in the tote road which follows the ridge mentioned above.

The site as a whole is noticeable for the proportionately large number of broken small chipped objects and for the total absence of small rejects. The chips are markedly coarse. Local slate was used for chipping to a very slight extent.

In June, 1914, an expedition composed of eleven men with equipment of six large canoes, four tents and complete camp-outfit, left Pittston Farm and ascended the small North Branch of the West Branch of the Penobscot. This was an exceedingly hard trip. Within five kilometers we reached the limit of paddling and were compelled to use poles. Soon afterwards all had to wade and drag the canoes. We proceeded slowly and carefully, since our canoes might be damaged on the sharp rocks and rendered useless. It is well to quote a few paragraphs from the field diary.

"Thursday the 25th. Continued dragging the canoes up stream all day. The men became tired. Some fire wardens had preceded us and they raised gates of the Bog dam. But for this we could not have got up, there being very little water. Camped in old lumber shack. Friday, 26th, proceeded on up the stream through dead water for about 6 kilometers. The North Branch here was originally very small, but as it passes through low land the dam

has changed several miles of land into a bog or muddy lake. At the head of this bog the stream passes through flat country with clay banks and high grass. Very crooked stream. Two kilometers of paddling equalled three hundred meters in a straight distance. Four or five kilometers farther, having dragged the canoes up to a clearing, found a cabin occupied by two Frenchmen.* Here the stream is not more than two meters wide. Later they informed us a new trail had been cut over the hills to St. John Pond. The distance is eight kilometers and the trail very rough. We found the Frenchmen absent the afternoon we arrived. Spent several hours hunting for them. Walked to St. John Pond and back. Searched shores, found nothing. The Frenchmen were found in the evening, and began making sleds to haul our canoes over the carry [to St. John Pond]. Saturday a. m. at 8.00, two sleds being completed, two canoes and baggage were hauled over. Our men had to help clear trail, cut trees, etc. Required labor of six men four hours to take two canoes eight kilometers. Following our custom, the cook's outfit went first and camp was established. Two more canoes were brought over late Saturday afternoon and the last two, Sunday morning. The canoe bottoms were found to be badly scraped.

"St. John's Pond was examined but no traces of Indian occupation found. Monday the 29th, started down St. John river [here called the Woboostook or Baker stream]. Small stream, heavily wooded. Water was cold and alive with trout. Great game country. Many deer seen. Our cook, James Rideout, without leaving his fireplace, counted nineteen in three hours. The stream was very small, full of rocks and rapids. It was necessary to drag canoes nearly all the way to Baker Lake, thirty kilometers distant. Rained hard Tuesday the 30th and we remained in camp all day.

"Wednesday, July 1st, proceeded on down river, wading usually but poling canoes now and then.* There were no signs of Indian encampments until we reached Baker Lake. No flint chips on the shores. Great quantities of duck, deer, trout, etc. We came to dead water several kilometers above Baker Lake and were able to paddle. All the men were glad of this because they had become chilled and tired wading in water. The elevation must be considerable as the nights are quite cold with frost. Spent half day at Baker's examining shores. Found a camp site at the outlet; stone celt, scraper, chips, etc. That evening reached Morrison's Depot Camp. Found no specimens.

*Fig. 114 illustrates how the canoes were lifted over rocks and shallows, logs and beaver dams

*Fig. 115 shows a beaver dam near the St. John.

"July 2nd. Ran down rapidly through swift water to a lumber camp where the Southwest branch and South branch or main St. John come together. Found a site, and as the river was much larger our troubles were over. Here were numbers of chips and spalls lying together as if there had been wigwam sites. [The material is a light, chalky rhyolite and different from stone on sites down river. It is almost white in color and much weathered.]

"From here to Seven Islands [July 4th] are several small sites**. Numbers of specimens have been discovered at Seven Islands and there is a village site here, but as it was planted in oats and timothy and this is the farthest up-river settlement with grain and hay high in price, the owner did not wish us to excavate. He had found a grooved axe, an iron tomahawk and some arrow heads.

"The afternoon of July 4th we ran through some bad rapids to the Big Black [or Great Black] River, and camped there until the morning of the 9th. This stream was mentioned as being rich in Indian signs. We examined all points of land and shores thoroughly, did much digging and sent an expedition up the Big Black 30 kilometers. Found two camp sites, only one important. It furnished a large stone ornament***, some knives, arrow heads, etc. This tablet is 18 cm. long, 6 cm. wide in the center. The top is decorated by notches. Material, granite; color, dark."

At the junction of the North West branch and the main St. John river there is indication of Algonkian culture in the form of flint chips, arrow heads and broken stone hatchets. No pottery was discovered in any of these sites, and the conclusion is that the camps are those of hunters and were not occupied as permanent villages.

Where Shield's brook, or the Metawakwansis stream, empties into the Great Black river was a reputed Indian burying ground. There is a field and sand ridge at this point, with a slight sand knoll on the edge of Shield's brook. The most curious feature is a group of little mounds, about two to two and a half meters long and a meter wide, scattered over the upper field. They exactly resemble the mounds with which modern graves are sometimes marked, but careful digging to a depth of two meters failed to reveal the slightest trace of any burials whatsoever, or any disturbance of the soil. Some at least of these mounds are palpably artificial and probably all are so. About one dozen were dug into without result in any case. A small ash layer, with one broken arrow head, was located on the slope of the sand ridge. The knoll in front of the forestry and fire wardens' cabins

**Sites are shown on our map of Somerset County in the Department files, but the map is not reproduced here. See plan XVIII, Aroostook County.

***This is shown below in Fig. 116. It is not of Red Paint People type, but smaller and made of a dark granite, well polished.



FIG. 111. Ash pit at Shad Pond.

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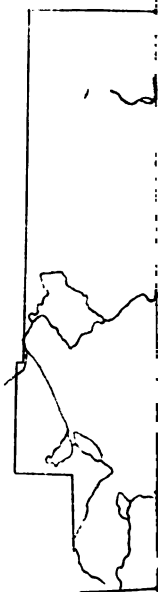
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was tested without result. A total of about one hundred and twenty-five test pits were dug.

From the Big Black to St. Francis on the Canada line, some seventy kilometers, the country was examined but little was found. Although the forests are very heavy and the timber line extends to the water, we dug hundreds of pits on points of land at the junction of streams and on all favorable sites throughout this journey. This heavy growth makes work difficult and also prevents extensive excavations. When the country is cleared, sites may be found, yet I doubt if large sites will be discovered even when facilities for work are better. The reason that nothing of consequence was discovered on the upper waters is that the Indians never visited those regions in any considerable numbers, not that our work was either insufficient or careless. The notes continue:

"We proceeded on down to St. Francis, mapping sites and on Saturday, July 11th, went up St. Francis river to Glasier Lake. The survey now consisted of twelve men. The tents were pitched at the head of the lake, 12 or 15 kilometers north of the St. John.

"Monday the 13th. Broke camp at Glasier Lake, moved down to John's farm at the mouth of the St. Francis river. Here we found a good sized camp site and discovered many flint chips, bones, and knives. Spent the night there.

"Tuesday the 14th. Worked in the morning, ran to Fort Kent, and camped at mouth of Fish river.

"Wednesday the 15th. Sent expedition up Fish river, fifteen kilometers, but they found nothing.

"Thursday the 16th. Went thirty kilometers down river to Edmonston, [mouth of the Madawaska, Canadian side] finding here an Indian village of the Malecites. Engaged a prominent Indian, Noel Bernard, and his brother, to go up to lake fifty kilometers up the Madawaska to search for quarry site, etc. Dug upon a flat near the Indian village. Negative results."

From now on there were more indications of Indian occupation, but all pointed to Algonkian stock rather than Red Paint culture, and most of the sites were not very ancient. There are three Indian settlements in New Brunswick at various points along the river. At these the older Indians took an interest in our work and gave us much information. Every story or tradition was investigated, but all related to Indians of the past two hundred and fifty years. With the exception of the old sub-chief, Noel Bernard, who told us of a site at the head of the Madawaska river, the Indians as well as the white people were of little or no benefit to our expedition. In two days Bernard and his brother returned in the canoe we had given them and reported a large quarry site, bringing back about a peck of material. This is a dark, almost black flint and seems to have been extensively worked

by the St. John Indians. It is just possible that the Madawaska stream, together with the St. Francis and Tobique, were the three lines of travel by canoe between the St. Lawrence and the St. John. This is what the Malecite Indians claim. These streams can be investigated some spring but they are too small to traverse in the summer except at the expense of great labor and the risk of damaging the canoes.

On the 19th, 20th and 21st, we went down to Grand Falls, in New Brunswick, spent a day there digging, but found nothing, and went on another thirty kilometers to the mouth of the Tobique. Here we spent some days investigating, and found that the modern Malecite Indian village was built over a prehistoric site — an interesting discovery. No cemetery could be found, although several hundred pits were sunk for a radius of about four kilometers about the mouth of the river.

“Wed. the 22nd. Spent a pleasant evening with the priest, Father Ryan, who told me all about his work with the Malecite Indians. He has been here eight years. We visited numerous Indians and found they knew little about ancient times. Went up Tobique stream five kilometers and dug, also sunk pits all about Indian village. Found a few flint chips and broken knives.

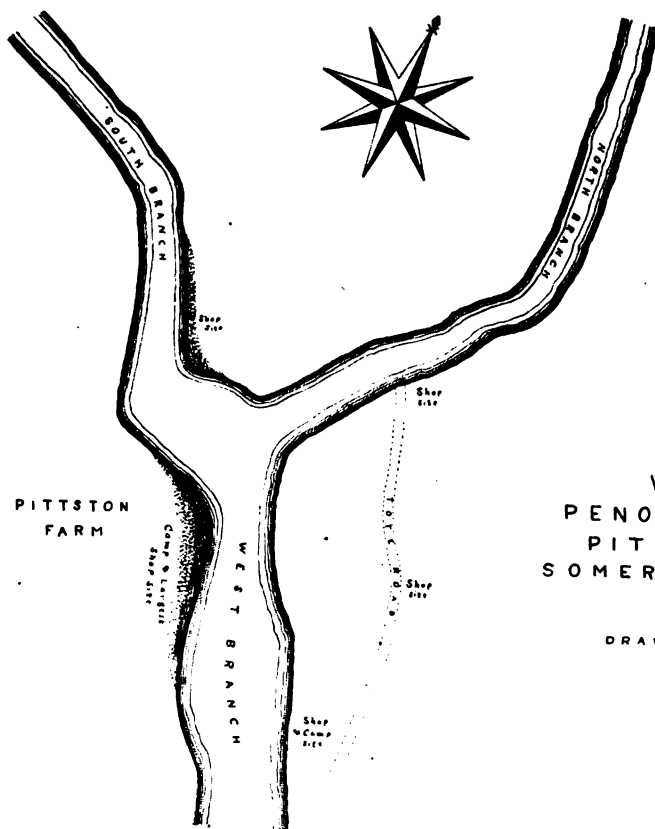
“Thursday the 23rd. Started from Tobique and ran to Bristol. Found an old Mohawk and Malecite fort across river. Dug in same but found nothing. Took measurements. No village site. Dug at several points along the river on high hills.

“Friday the 24th. Paddled and sailed fifty kilometers to Woodstock. Camped on an island. The new guide, James Devoe, gave me a list of nine ancient villages of his people, the Malecites, between Tobique and St. John City.

“Saturday July 25th. The men dug at the mouth of brook three kilometers up river. They found flint chips and broken knives there. We ran to Meductic, sixteen kilometers below Woodstock and camped Saturday evening.”

Meductic (or Medoctic) is the largest and most important site that we have observed on the St. John, and a most interesting place. It is situated on a large bottom or flat terrace extending for about a kilometer along the west bank, and there are two good springs. At the upper end it is historic ground, at the lower, prehistoric. At least so we assume, for there are few chipped objects on the upper part of the field, but numerous deposits of ashes and burnt stones.

One of the earliest chapels built by the Jesuits was erected here, and the King of France gave a bell to the church about 1650, if I am correctly informed. From this village raids were organized against the Massachusetts colony; it was one of the sites of the French and Indian war, and played its



PLAN XVI
 THE FORKS,
 WEST BRANCH
 PENOBSCOT RIVER.
 PITTSTON, MAINE.
 SOMERSET COUNTY.

DRAWN BY E.O. SUGDEN. 1914.

part in the American Revolution. The Mohawks and the Malecites had a great fight here about three centuries ago.

We dug nearly a week on this place, but as oats, potatoes, hay, etc., were at their best, damage for destruction of crops was excessive. All the farmers have specimens of the usual forms but none of the Red Paint types were observed, and no ancient cemetery could be found. A child's skeleton was found during our testing operations, but as it appeared to be recent we left it in its grave. The place merits careful study at some future time.

We ascertained at Meductic that Mr. Guernsey of the Peabody Museum had visited this site two years previously and that Professor Speck of the University of Pennsylvania, and the American Museum of Natural History, New York, had worked here and farther down the St. John. We did not wish to cover ground they had explored, since their field notes would probably be available for our use; therefore, after we had spent some days digging test pits and collecting surface material amounting to over one hundred chipped objects and pottery fragments, we left the place and moved overland to Eel river, eight kilometers distant to the west.

THE ST. CROIX WATERS

In Washington County, Maine, are the Grand and Schoodic Lakes and the East and West Branches of the St. Croix River, which drains a considerable area. As some collections of red jasper and projectile points presented to the Peabody Museum by Dr. S. J. Mixer came from Grand Lake*, and as the author of this report had frequently heard of the "wealth of archaeological material" supposed to exist in the St. Croix waters, he decided to take the survey to that region. On the 30th of July, accordingly, we abandoned St. John waters and moving across from the head of Eel river, we reached North Lake, the head of the St. Croix, about dark. We camped upon a fine sand beach and next morning found a small Indian site. We continued prospecting on this part of the St. Croix and near Forest City up to August 2nd and then carried the outfit around a log jam to Spendic or Grand Lake. Here heavy winds continued, making the lake dangerous for our canoes, and we therefore chartered a steamer and spent two days examining all the points and shores.

The only specimen recovered was a celt or gouge-hatchet which Mr. Crandalmeyer, who owns a cottage on the lake, presented us. Not far from the lake, on an elevation or sand ridge known as Indian hill, not quite a kilometer from the outlet, two red ocher deposits were discovered by us, but no graves. A Dr. Martin, who lives in Vanceboro and occupies a summer cottage on one end of this sandy knoll, had found a long Red Paint

*In Room 32 of Peabody Museum, long case, "Maine": Unfinished implements (cache forms), scrapers, rejects, and chips. Found buried about nine inches deep on Twin Sisters Island, Grand Lake, Washington County, Maine. Most of these stones are wholly or partly of a dark reddish stone (jasper.)

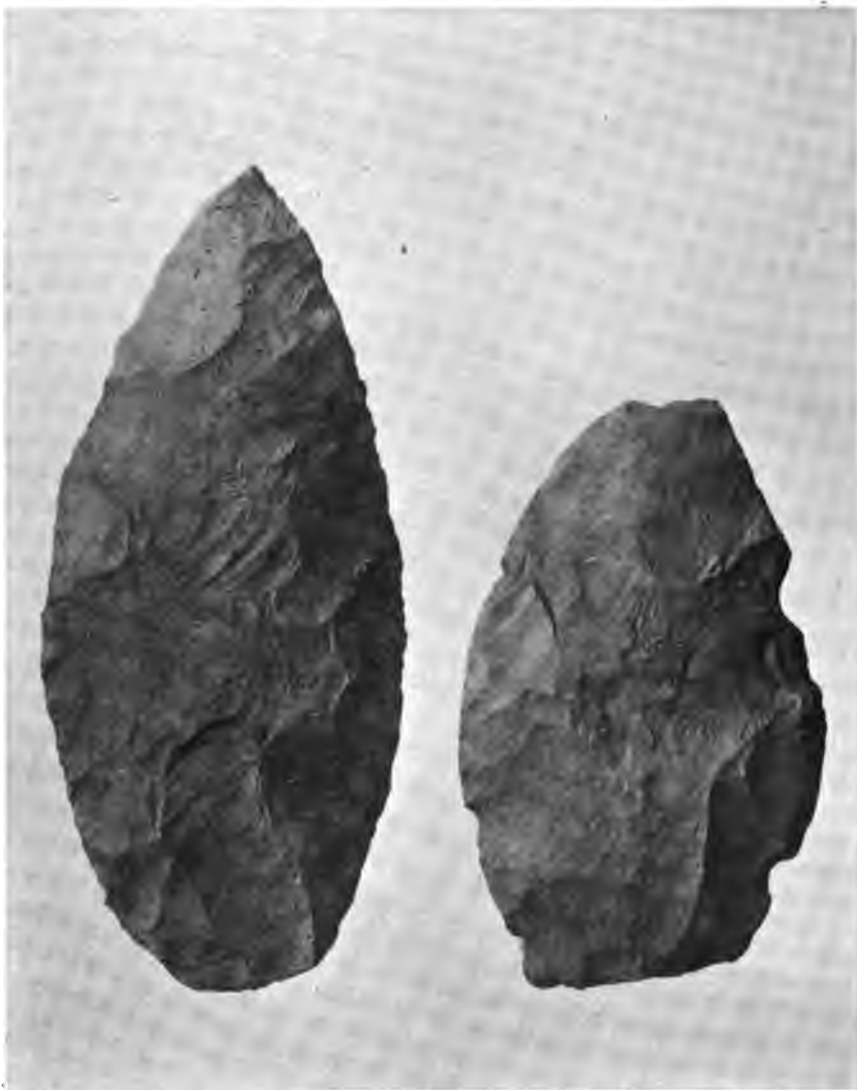


FIG. 112. Leaf shaped implement, probably complete, to the left; unfinished blade to the right. Pittston farm site. See p. 228. S. 1-3.

People adze blade, and the proprietor of the Vanceboro Hotel had a slender pendant of the Passadumkeag type which was found on a sand beach at the lower end of Spendic Lake. The citizens of Vanceboro and vicinity took much interest in our work and offered suggestions and freely gave us permission to excavate, but aside from the sand knoll referred to we could find no cemeteries, either modern or ancient. It is probable that the few deposits of red ocher in the sand ridge indicate two or three graves, rather than a cemetery of any extent.

Some three weeks were spent in the Grand, Schoodic, and St. Croix waters, but no sites other than ordinary camp sites could be discovered, although we searched diligently. Mr. Manning was meanwhile directed to visit East Machias. In company with several men he examined the region and I herewith append his report from the field notes.

EAST MACHIAS

"A camp site here on the strip of land between the field owned by a Mr. Talbot and the Maine Central railroad track was investigated. The field immediately up stream from this lot also shows traces of wigwam locations. Where cut by the railroad, the layer of black earth bearing chips and many fragments of pottery is in places more than 40 cm. thick. The greatest recorded depth for pottery was 60 cm. from the surface. The pottery was variously decorated, and the decorations, with base and rim forms, seemed to indicate the archaic as well as the late types of Algonkian pottery. One fragment appeared to be an Algonkian copy of Iroquois rim form and design. No pottery indicating shell tempering was seen. A favorable-looking knoll adjacent was not tested as the owner did not desire us to disturb a heavy hay crop.

"At the outlet of Gardiner Lake there are evidences of another camp site. Gardiner Lake was searched west of the outlet for a mile, as was the gravel bluff where the Massachusetts Institute of Technology summer camp stands.

"Mr. Smith, who owns land at the outlet, tells of finding gouges and 'chisels' on a knoll upon his land, as well as a long slate spear and a fragment of one, the latter being presented to us by his son.

"Mr. Kingsley, the druggist of East Machias, has a small collection of Algonkian pieces found in the neighborhood. He says that a skeleton wrapped in hide (?) was dug out of a gravel knoll behind the present town hall. This burial was historic, as the Indian possessed a gun and an iron hatchet."

THE DAMARISCOTTA REGION

In 1918 it was decided to examine the coast between the mouth of the Georges river and the mouth of the Kennebec, in order to determine if there



FIG. 113. Three unfinished objects of felsite from Pittston farm site, see p. 228. S. 2-5.

were any village sites, Red Paint People's cemeteries, shell heaps, or even historic Indian camps to be found there. A small expedition composed of three men spent about ten weeks covering this territory. Early in June they located at Waldoboro and went to the head of the Medomak river. Little of consequence was here found. The men cruised about Waldoboro Bay finding a number of shell heaps, which were placed on the maps. Many of these were examined by means of the usual test pits, but they were not rich in artifacts of bone or stone.

We then went to Muscongus Island, since reports by local authorities indicated a large burial ground there and we knew that relics from graves had been in the possession of citizens of Waldoboro. We prospected on the north end of the island, which we were told was the site of the cemetery but the sand was so shifted and the ocean had washed up such large quantities of gravel, that it was impossible for us to locate any graves. The shell heap on the island was tested by some thirty small pits but little of consequence was found. On the south end of Hog Island, distant about a kilometer from Muscongus, we found a shell heap about a hundred meters in length, on land owned by Professor Todd of Amherst. As he would not occupy his cottage until the 20th of July, we were unable to secure permission to work extensively and therefore only sunk a few small pits. We found broken pottery, a few small pieces of bone, and one scraper.

After completing the work at Waldoboro we moved across country to Pemaquid Lake and spent some time in investigating the shores of the pond, where Mr. A. L. Phelps had discovered a Red Paint cemetery many years ago. This had been completely excavated and we could find no remaining graves, but we did find a small village site two hundred meters below the cemetery, on low land nearer the shore of Pemaquid Pond.

After some time spent in this region we paddled to the head of Damariscotta Lake, which is about ten kilometers in length. There some arrow heads, chips, and burnt stone were found on certain points near the lake or on islands but no village site could be located. The shores of Damariscotta River were carefully cruised but nothing of interest was discovered. We also examined the large shell heaps at Damariscotta but did no digging, for the reason that Professor Putnam had carried on extensive excavations there and the net result of his exploration had been set forth in the Peabody Museum reports.*

Why there should be so little of significant remains in accumulations more extensive than are found at any other place north of Florida, is not evident.** It was always supposed that evidences of a large village site would be found near the Damariscotta shell heaps, but even when careful

*Prof. F. W. Putnam, 2nd Annual Report, Peabody Museum, Harvard Univ., pp. 7-19.

**At the present time, after much of it has been carted away, the largest heap at Damariscotta is still nearly nine meters in height.

surface searching was inaugurated, we could find no fields within several kilometers above or below the shell heaps or even back toward the hills, where there had been an Indian encampment of any considerable size. If the Indians camped at the shell heaps they left practically no village-site debris. This is remarkable when we consider the size of the heaps and that they must have required a long time for accumulating. The following explanation, however, suggests itself. At the present writing, the oyster beds opposite these heaps are not extensive. Old residents of Damariscotta village informed me that there were more oysters in earlier times but the beds were never large. If this condition existed in Indian times, fifty or sixty men working in the river at low tide for two or three days would greatly reduce the available supply of oysters. In order to secure another supply they might wait two or three years until the oysters increased. It would not be necessary for such a number of Indians to stay near the beds longer than two or three days. Then they would return to their villages. The nearest large village site is Pemaquid, distant some twelve or fifteen kilometers, and there are also other villages along the coast short distances to the westward. It seems to the writer that Indians might journey from Pemaquid to Damariscotta in a few hours, open shells, secure oysters and return home all within a very short time.

The entire Sheepscot valley and arms of the sea in the vicinity of Wiscasset were examined and some shell heaps were found and mapped but no Red Paint People burials could be discovered.

THE LAKE CHAMPLAIN SURVEY OF 1917

At the meeting of the American Association for the Advancement of Science held in Portland, Maine, in August, 1873, Professor George H. Perkins of the University of Vermont, who was also State Geologist, read a paper entitled "An Ancient Burial Ground in Swanton, Vermont."* This paper described a large number of burials somewhat similar to those of the so-called Red Paint culture. Archaeologists had been much interested in the Maine explorations and at the meetings of the Anthropological Association and elsewhere the writer of this report was frequently asked whether the Red Paint People culture of Maine could be correlated with that of any known tribe in the New England region. In order to get some light on this question it was decided to explore the Lake Champlain region and particularly the Swanton site. Accordingly, in June, 1917, the men motored from Bucksport, Maine, to Burlington, Vermont, examining various sites on the way, and with the coöperation of Professor Perkins, who was with us several

*This and other papers of Professor Perkins's upon the archaeology of Lake Champlain and Vermont will be found in the *American Anthropologist*, n. s. vol. XI, 1909, pp. 607-623; vol. XIII, 1911, pp. 239-249; vol. XIV, 1912, pp. 72-80, 584; and in the Reports of the State Geologist of Vermont.



F.G. 114. Dragging the canoes up the North Branch of the West Branch, Penobscot.

weeks during the summer, some three months were spent in careful search of the Lake Champlain territory. (See plan XIX.)

Professor Perkins and our party first visited Colchester Point, about nine kilometers north of Burlington on the shore of Lake Champlain. This is a long, prominent point entirely composed of sand. Originally there was turf and a heavy growth of white pine upon it. Here was the site of an Indian village which extended about five hundred meters. The quartz and chips are extremely thick and we picked up four or five different varieties of material used by the Indians. The ground is literally covered with thousands of small and large flakes, burnt stone, etc. Pottery is not common. Professor Perkins found a grooved, decorated stone, six or seven centimeters in length. It is shaped like a plummet and made of steatite. Mr. Sugden found twenty-five spear heads and arrow heads in a cache, which lay in a compact space about ten centimeters in diameter. We secured fifty specimens in all. They cover the usual Champlain types as described and illustrated in Professor Perkins's published papers.

Afterwards the field party went entirely around the shores of Lake Champlain, locating and mapping village sites. Mr. L. B. Truax of St. Albans, who had witnessed the early excavations in the Swanton graves about fifty years before, suggested that we examine the Mississiquoi River in Swanton, as many objects had been found along the bank. Accordingly we spent several days cruising in a motor boat up and down the river. Near the mouth we found what Mr. Truax thinks are three levels of occupation in the banks. They may be large camp sites which were overflowed, as the river is sometimes over its banks. The banks are of clay, not gravel. Professor Perkins was not certain what caused these strata. The lowest layer, which is down a meter below the surface, furnished the rougher objects. More work will have to be done in that region.

The men went also to Highgate Springs and worked there about two days observing small camp sites, and after the examination of the Mississiquoi River we went to Isle la Motte where is a large site on a prominent sand point at the north end. Champlain visited this place and the Jesuits set up a mission there in early days. At the present time there is a Catholic shrine on the spot and we could not secure permission to excavate until the writer had interviewed Bishop Rice, who is in charge of the Burlington diocese. He permitted us to dig up to within ten meters of the shrine itself. In the sand, at a depth ranging from ten centimeters to one meter, much broken pottery was discovered from which we may be able partially to restore some vessels. While the pottery in the upper layers appeared to be later but not Iroquoian in character, the lower layers contained fragments of vessels of the pointed base type, the archaic Algonkian form. The amount of debris left by the Indians at this place would suggest that, with the possible exception of Colchester Point, the Isle la Motte shrine marks the largest

Indian site upon Lake Champlain. It is natural that Champlain and the Fathers, when voyaging on Lake Champlain, would stop at the largest village and there set up the mission.

At various points along the Mississiquoi river and upon Big and Little Otter Creeks are camp sites, and three large ash pits containing unio shells were found. At the outlet of Lake Champlain there are other sites, and a number of collections were observed and studied at Rouses Point. The region between Rouses Point and the St. Lawrence river was not examined. Although we had letters from the Canadian Commissioner of Indian Affairs, Mr. Scott, and also from Professor Smith, Curator of the Ottawa Museum, it was thought inadvisable to take a party of strangers down the river, as Canada was at this time engaged in the World War and the border was heavily patrolled. The Canadian authorities will probably explore the region between the foot of Lake Champlain and the St. Lawrence at some future time.

Having examined the Lake Champlain sector to some extent and entered the sites upon plan XX, we concentrated on the Swanton sector. Professor Perkins and Mr. Truax were with us the entire time we were there. About three kilometers north of the village of Swanton is a long, high ridge composed of fine sand. Here, about 1865 or 1866, when local people began cutting the heavy growth of first-growth white pine, the Swanton cemetery was discovered by accident, there being nothing on the surface to indicate the presence of graves. Professor Perkins's report and further conversation with Mr. Truax and Mr. John W. Brough, who were both present when the first graves were opened and from whom Professor Perkins had heard of the site, led us to believe that at least twenty-five and possibly thirty-five graves were discovered. They ranged about a meter below the surface. After the pines were removed, as Lake Champlain is subject to heavy winds, the sand began to blow and dunes were formed. Indeed it was due to the wind action that the first graves were discovered; then digging was resorted to by local collectors. In some instances the sand was entirely blown away and the graves uncovered by the wind. As it has been impossible to find another cemetery in the region and no more graves could be discovered in this one, although we dug several hundred pits, and further in view of the importance to New England archaeology of the Swanton finds, it is well to reprint here a portion of Professor Perkins's report. Certain changes have been made with the author's consent and therefore quotation marks are omitted.

The sand in which the Indians dug graves is of very light color but that immediately around and beneath the body was with two exceptions colored a dark red or reddish brown; in the exceptional cases it was black. This red sand was from ten to fifteen centimeters thick and the color was undoubtedly due to the presence of red iron oxide or red hematite, small



FIG. 115. A beaver house and dam on the upper St. John.

pieces of a compact, deep-red variety of that mineral having been found in several of the graves. These bits of ore might color water if powdered, but they were not soft enough to have caused discoloration of the sand by staining such water as might have trickled through it. Thus the oxide must have been powdered and mixed with water or perhaps with the blood of some animal, and poured into the graves as a part of the funeral rites. As nearly all of the objects taken from the graves are stained, as well as the sand, it is probable that the coloring material was poured over the body and objects after they were placed in the grave. The black color in the graves was probably due to decomposition of organic matter, no coloring liquid having been poured into those graves.

The skeletons in these graves were much decomposed, only two bones, a femur and a radius, being entire, with several others nearly whole. From one grave was taken nearly half of a skull, but most of the bones crumbled more or less on exposure to the air.

Of the objects themselves, a number of smooth, water-worn pebbles of white quartz weighing about a pound each, were found. They averaged about ten centimeters in length, seven in width, and two and a half in thickness. In one grave was a piece of black shale resembling the Lorraine shales of New York, about fifteen centimeters long. This was not worked. In another was a large piece of dark red Potsdam sandstone, which occurs in formation near Highgate. This was rudely squared and smoothed.

Eight or ten copper implements were found, several of the larger ones being chisel-shaped, long and slender. The surface was slightly convex and the corners beveled. There was a groove running along the sides of each copper tool. Some of these tools are quite sharp and all of them are of the native copper from Lake Superior.

Fragments of wood occurred and numbers of shell beads and one or two entire specimens of the small *marginella conoidalis*, common on the Florida coast, were found. These shells were drilled longitudinally through the spiral. There were about fifty small shell ornaments cut from the columellae of large shells, from four to seven centimeters in length. Most of these were perforated. Several stone ornaments, a bird stone, and a bicave or discoidal, are shown in fig. 120. It is unusual to find a bicave or discoidal stone in a grave. Some of the problematic forms of dark veined slate are of the well-known perforated type, rectangular with one surface flat, the other convex.

The most interesting of the objects from the graves were the masses of iron or iron nodules and the stone tubes. About a dozen of these tubes, similar to those shown in figs. 118 and 119 were taken out of the graves.*

* The tube shown in fig. 118, now in the Andover collection, is $23\frac{1}{2}$ cm. long, 26 mm. wide at the open end, 24 mm. wide at the mouth piece, and about 35 mm. wide in the center.

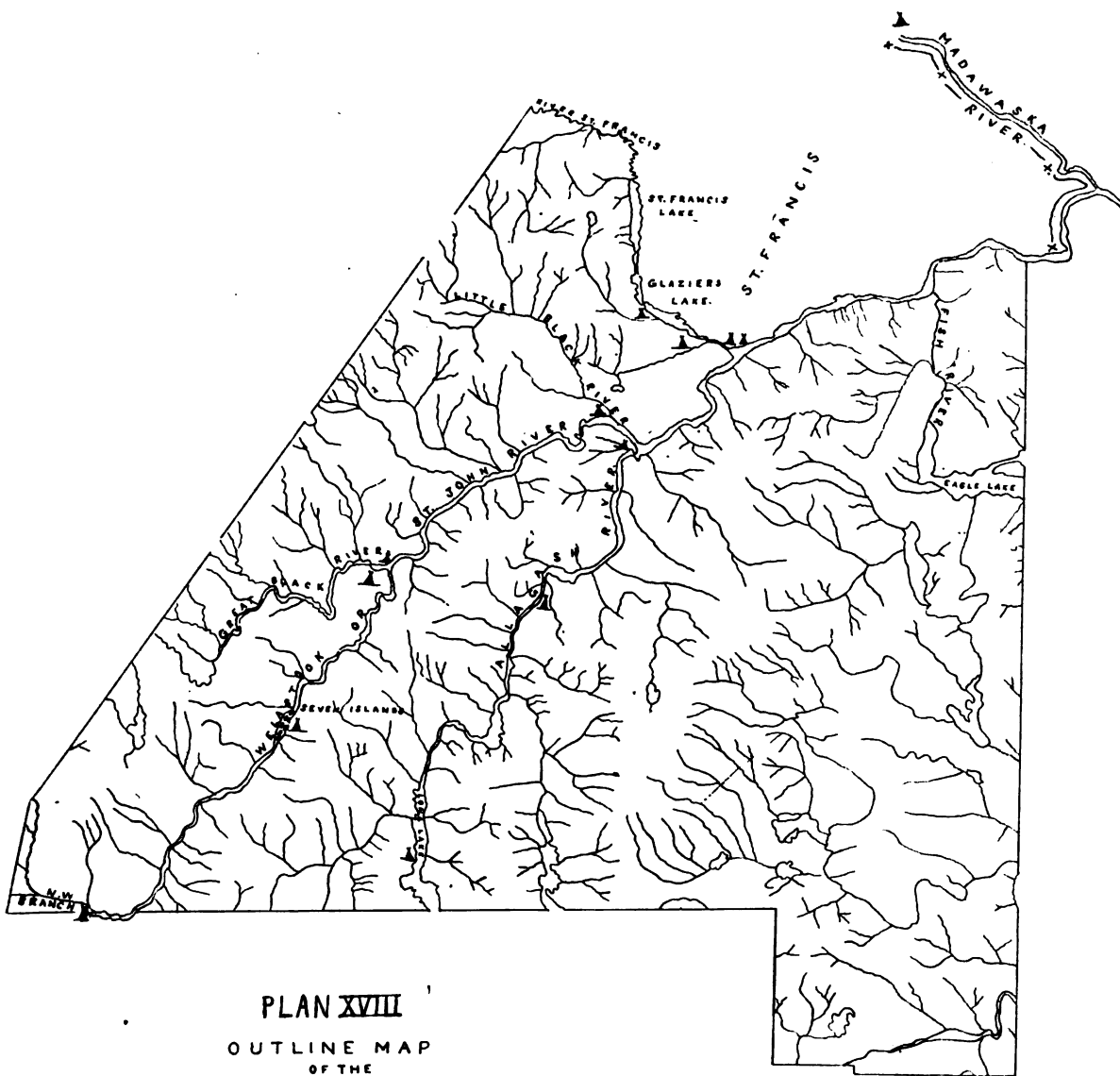
Three or four of these are in the State of Vermont and University of Vermont collections; Mr. Truax possesses one; Phillips Academy secured the one which Mr. Brough had kept in his possession for more than forty years; one is in the Smithsonian Institution collection, another in a museum at Paris, one probably in the Museum of the American Indian, New York, and the others are scattered. They are much larger than the two tubes found by Phillips Academy surveys at Mason's Cemetery, Lake Alamoosook, both of which are shown in fig. 28 of this report.

Professor Perkins's comments may be condensed as follows:

All tubes showed great care in manufacture. Materials differ, some hard, others quite soft. The hardest can be scratched by a knife and all appear to be made of a kind of argillaceous sandstone, sand predominating in harder and clay in softer tubes. The surface is very smooth in most, and shows few marks of the tools by which they were wrought.

One tube is especially interesting because on it are the only markings found on any object taken from the graves. They are near one end of the tube and consist of an outline drawing of some bird, with three characters below it. The objects are engraved or scratched on tube, scratches somewhat irregular and neither wide nor deep, some very fine. The bird resembles a fish-hawk, 2.5 cm. long and 1.5 cm. broad across wings. The three characters below the bird are made up of straight lines and dots, about 5 mm. high and a little less in width. The color of the tubes is light drab except where stained by iron oxide.

They are not uniform in size throughout the length, but largest at one end, and often both ends are larger than the middle. Three somewhat diverse forms are found. One is contracted near one end and enlarges very gradually until near the opposite end, when it again contracts, the shape being similar to an ordinary ball club. Another form has greatest diameter at one end, from which the tube contracts, first rapidly but soon gradually to the other end. Another has a raised rim at the mouthpiece and is then slightly contracted, with the body of even size. The tubes vary from 12 to 25 cm. in length. Tubes of the first form described are largest, those of the second smallest. Both ends of the tubes are cut off squarely. All are perforated in the same manner, the hole running directly from end to end, being about twice as large at one end as at the other. In the largest tube found the bore is 2.25 cm. in diameter at one end and 1 cm. at the other. The larger end of the bore seems to have been scraped out (after the main portion of the hole was made), by some thin-edged instrument. Through most of the length of the tube the walls are thicker than at the ends. In some tubes the small perforation from the mouthpiece inward does not strike the center but is to one side. In nearly every tube a stone plug was found, fitted to the smaller orifice, but not well made. In Fig. 118 is in-



PLAN XVIII
 OUTLINE MAP
 OF THE
 NORTH WEST PART
 OF
 ARROOSTOOK COUNTY,
 MAINE.
 DRAWN BY
 E. O. JUDGEN
 1919



FIG. 116. Figure above, long pointed object found on the southern end of Lake Chesuncook by Arthur E. Marks about 1890. Material, granite. Ornament from mouth of Big Black river, St. John, see p. 221. S. about 1-2.

cluded a stone plug which was found in the tube we secured from Mr. Brough.

The presence of these tubes in the graves at Swanton marks a departure from the Red Paint People culture. Similar stone tubes are on exhibition in the large collection in the Morgan Memorial Museum at Hartford. They have been found in graves in Connecticut, and this emphasizes the importance of the Connecticut work recently projected and to be carried out in coming years. Until a number of cemeteries in that State are opened it may be premature to draw conclusions; however, we will state that the association in Vermont graves of Lake Superior prehistoric copper and early problematical forms with these tubes and iron nodules, and the presence of similar tubes from Indian sites in Connecticut Museums, brings before us one of the most interesting and important problems in New England archaeology. The Swanton graves do not appear to be what is known as late Algonkian. They are certainly not late Iroquoian at all. They are not of the Red Paint People culture, for there are no gouges, adze blades, long slate spears or plummet effigies; but they represent American stone-age art of high type and may indicate a very early culture. Certainly they present forms well worth careful study and consideration.

Professor Perkins has suggested that the tubes are similar to several found in the mounds of the Scioto Valley, Ohio, but tubes there are very rare, and while Squier and Davis found one or two, the writer found none in the great Hopewell group and he is not aware that Professor Mills has discovered any in the fifteen or more large mound-builder sites explored by him in the past twenty years. Furthermore, the few tubes found in the Ohio mounds, while associated with some copper, are not accompanied by such other objects as were found in the Swanton graves. It is to be regretted that a cemetery of the importance of Swanton can not be found by modern investigators and properly hand-trowelled out. Let us hope that we may be able by diligent research to discover an undisturbed burying ground of similar character elsewhere in New England.

Finally, Professor Perkins appears to be correct in his contention that the Lake Champlain Valley was considered both by the Algonkins and Iroquois as "the enemy's country". After the formation of the Iroquois League about 1570, the villages of the Algonkin on Lake Champlain appear to have been raided, and in early historic times and shortly after Champlain's visit to Isle la Motte the Indians did not live in any numbers on the lake shores but moved back on tributary streams. It would appear therefore that the village near Swanton was not inhabited at the time of Champlain's visit. How much earlier the cemetery is, it is impossible to state, but we are of the opinion that its antiquity is considerable.



FIG. 117. Running the rapids below Shad Pond, West Branch, Penobscot river.

PART. V.

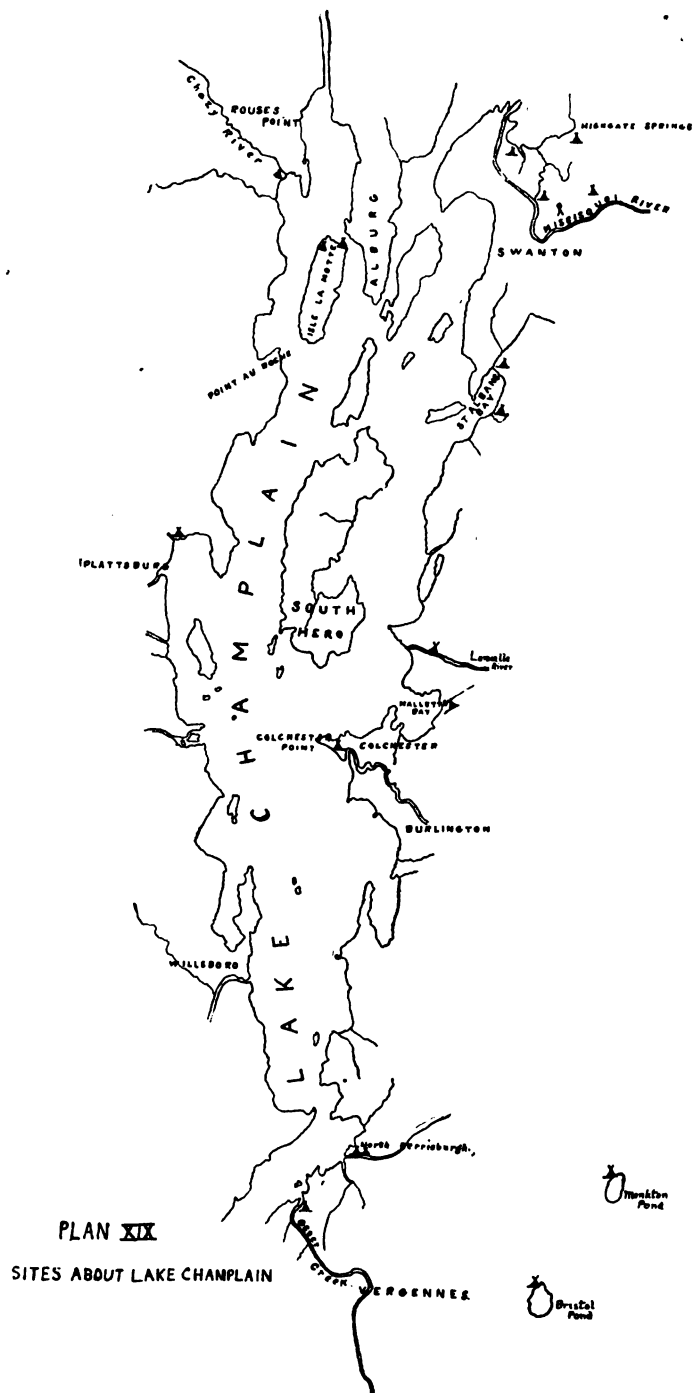
CONCLUDING REMARKS

These eight seasons spent in the Maine field and in extended study of material secured from the graves, shell heaps, and village sites, afford sufficient data for some general observations. The author of this report has visited all the museums in which Maine artifacts are exhibited, and includes in his summary, reports of other persons together with their collections. As one result of all our labors in the State of Maine, about twenty thousand objects* have been taken from various sites. Nearly four thousand of these we have placed in museums in Maine.

The first question which arises in the minds of many students is with reference to the total Indian population in Maine about the year 1600. It is impossible to give even an approximate estimate in figures, but in view of the large accumulation of village-site material along the coast, the writer is of the opinion that the present tendency to minimize Indian population in New England is not correct.

We might secure light on the problem by means of a simple comparison. The village of the Norridgewocks, where Father Rasles met his heroic death contained a good many Indians who had probably been there for some time, yet when one inspects the surface of this site, very few implements, chips of flint, broken pottery, or other artifacts are to be found, in comparison with other sites which were unknown to either the earlier voyager or later observers. Pemaquid also is frequently mentioned in the early narratives as containing a considerable Indian population, yet little is found at Pemaquid compared with Mattawamkeag, and the objects of bone, stone, shell, or clay are far less in number than those discovered about the shores of Sebec Lake or even at Moosehead. Castine was a rendezvous of the Indians at the time of the earliest French exploration, and Indians remained in the vicinity of Castine as late as 1750 or 1760, yet an exploration of a dozen shell heaps within a radius of about eleven kilometers from Castine and of seven shell heaps within three kilometers of Count Castine's fort, reveals very few objects of European manufacture, and these are found in the upper layers of the heap. There were many traders and travelers, both French and English, coming to the settlement and bartering with the Indians; at one time more than four hundred Indian warriors assembled to join the white inhabitants in an attack on the New England settlements; yet notwithstanding a long period of occupancy by the Indians, traces of contact with Europeans are very slight about Castine. This is not mere opinion but the result of ex-

* Three thousand of these were in the Marks collection, which we purchased.



tended and careful exploration of many sites, not only upon the coast but extending up the rivers far into the interior.

All this seems to the writer to be significant. If we find so little material indicating contact with Europeans on sites which are frequently mentioned in our historical narratives, and if we further know that there were large numbers of Indians assembled at these places and that the contact between the whites and the Indians covered a period of time not less than 150 years, we are justified in drawing the conclusion that the other Indian sites on which so much material has been found must have been occupied for a very considerable length of time by a large number of Indians, and that for the most part such sites are prehistoric.

Small pox and other epidemics are known to have carried off several thousand New England Indians in the sixteenth and early seventeenth centuries. Probably natives in Maine were affected as well as others. Be that as it may, it would seem within the bounds of reason to conclude that several thousand Indians were living along the Maine coast and in the interior about the year 1600.

The reasons that so many large villages were found along the coast are not far to seek. Here the inhabitants were assured of a continuous supply of fish, seals, ducks, clams, and other food easily obtained from the sea and adjacent lands. They could make excursions of various durations into the interior and procure beaver, deer, bear, otter, moose, caribou, muskrats, and other game. In case the hunters of large villages exhausted the deer, moose, beaver, and other game of one part of the country, parties could be made up and distant points in the interior visited. On such trips they would hunt for a certain period, then construct birch bark canoes and bring the skins and smoked meat back to the villages. They preferred to do this because if the largest villages were located in the interior, scarcity of game would certainly cause the inhabitants of the villages to suffer. On fresh water ponds it is difficult to secure fish in quantities through the ice, and should the beaver in a certain area become scarce and the deer and moose migrate as these animals often do, suffering would result in winter. On the sea-shore on the contrary, they might be restricted for a considerable length of time to sea food, but they were always certain of the means of supporting life. The large village at Bangor was sufficiently near the coast to share this advantage.

Chesuncook and Meductic, Sebec and Moosehead, are exceptions, being far inland, yet here the aborigines were in the heart of a great game and fish country and it is not to be supposed that in ancient times there was any great amount of suffering. From Meductic the Indian could reach tide water on the lower St. John in about four days' travel. The inhabitants of Chesuncook could canoe to Castine in six days, and Sebec Lake is within four days' easy journey of Castine. From the upper St. John and the upper Aroostook

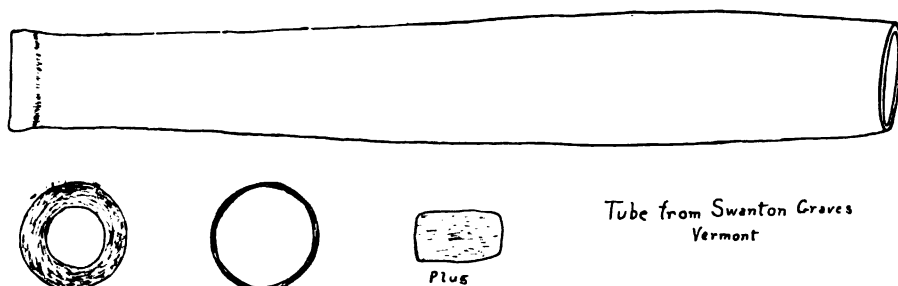


FIG. 118. Tube and plug from Swanton grave. Below to left, the opening at mouth; to right, the open end. P. 253. S. 1-2.

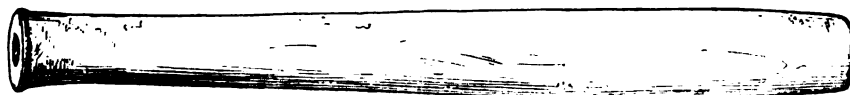


FIG. 119. A Swanton tube in the Smithsonian collection. S. 1-2.

it would not however be possible to reach the ocean in less than eight or ten days' travel. Probably many of the Indians from Chesuncook and Meductic, as well as other interior sites, came down the river late in the fall and spent the winter near the coast.

I have referred to the ease of travel by water in the State of Maine. Although our expeditions covered great distances by canoe, yet when one inspects all the routes that could be taken by water, it is seen that we have traversed less than ten percent of the canoe mileage of that State. That Indians penetrated to every corner accessible by canoe, is not to be doubted. Probably they travelled on foot with light packs to the heads of rivers or lakes, constructed their birch bark crafts there and then made their way down. In travelling down stream the distance one may journey in a day depends on the water and the hours of labor. For Indians to force their canoes fifty kilometers in one day would not be excessive. We have equalled that when we have not had head winds to fight. At the proper stage of water it would be possible to journey from Moosehead Lake to Castine in one week, provided no stops were made for hunting or fishing.

Notwithstanding very careful work, none of our expeditions were able positively to identify a village site of the Red Paint People. Mr. Smith was more fortunate, as has been observed. (See pages 134-143).

No uniformity is to be observed in the relation of shell heaps to Red Paint cemeteries. On Mr. Haskell's estate, Blue Hill, where there was a large cemetery, there is no shell heap of great extent near. The reverse is true at Sullivan Falls, where there are large heaps within a few kilometers of the cemetery. From Boynton's shell-heap site to the cemetery at Ellsworth is about twelve kilometers. The nearest large heaps to Lake Alamoosook are those of Castine, probably twenty kilometers south.

Although Alamoosook is considered the center of the Red Paint People culture because of the grouping of cemeteries about it, no really large village site was identified there, the numerous specimens that have been found about the outlet being chiefly Algonkian forms. It is not to be supposed that the Red Paint People would use a different class of materials where their habitations were located, from those placed in the graves.

Professor Mills of the Ohio Museum was able to solve many of the problems concerning the Mound Builder culture of that State by twenty years' intensive work in a small area. In the State of Maine also it is probable that should the state authorities, as has been suggested, continue a survey in the field from May to October during the next twenty years, all these various questions could be satisfactorily answered. Labors in the Ohio field are, to be sure, much easier than in Maine; the mounds are prominent landmarks, the country is all cultivated, and there is no unbroken forest. These factors should be taken into account by the critical reader of our report on explorations.



FIG. 120. Specimens from University of Vermont collections. Found in the Champlain region. S. 2-3. A. Champlain Valley. B. Hubbardton, Vt. C. From a grave at Swanton. D. From a grave at Swanton. E. From Champlain Valley.

It is unnecessary to recapitulate our evidence as to the lack of known Algonkian forms in the Red Paint graves or the total absence of Red Paint People types in the shell heaps. Figs. 122 and 123 are of well known Algonkian types, found on the surface in Maine. Readers are requested to carefully compare these with the grave finds.

The practical field archaeologist, if at all familiar with New England cultures, will concur in the suggestion that there was a very early culture occupying an area in central and southern Maine, which was separate and distinct from other and probably later cultures. Whether this subsequently became Algonkian is to be doubted, and we have already stated that it is unlike any other culture, save possibly that of the Eskimo. To a certain extent the Swanton graves in Vermont indicate another very early culture similar to one which we shall probably find in Connecticut. Thus in Connecticut as well as near Lake Champlain, there may be a tribe, if not a culture, preceding the southern and northern New England Indians as we have known them in the last three centuries. The proposed archaeological survey of the rest of New England will probably determine just how many cultures obtained in the area outside of Maine.

We know that certain well known tribes, such as the Podunk, Pequot, and Narragansett, had large villages and cemeteries of considerable extent. When these are carefully investigated we shall undoubtedly have assembled for the inspection of students a large fund of information. It may be possible then to determine whether there were marked local or tribal differences between the art-forms used by these several divisions of Algonkian stock. Other cemeteries indicating the presence of a culture not Podunk or Pequot, or Narragansett may possibly be found. The presence in Connecticut museums of a few tubes identical with those from Swanton necessitates careful search for cemeteries of all kinds, regardless of whether they relate to the historic or the prehistoric period. The problem of the origin of the Pequot, Podunk and Narragansett tribes is thus before us and should have our earnest consideration, since it may have a direct bearing upon our Maine cultures. It seems that we are dependent upon archaeology and above all on the tabulation and study of art-forms from the graves, if we are to form conclusions as to the origin and development of the several cultures or tribes in that interesting section of our country which lies east of the Hudson river.

Finally, the author of this report considers the Red Paint People to be separate and distinct from other tribes of the New England region. Their culture is peculiar and cannot be correlated with any known tribe either historic or prehistoric.

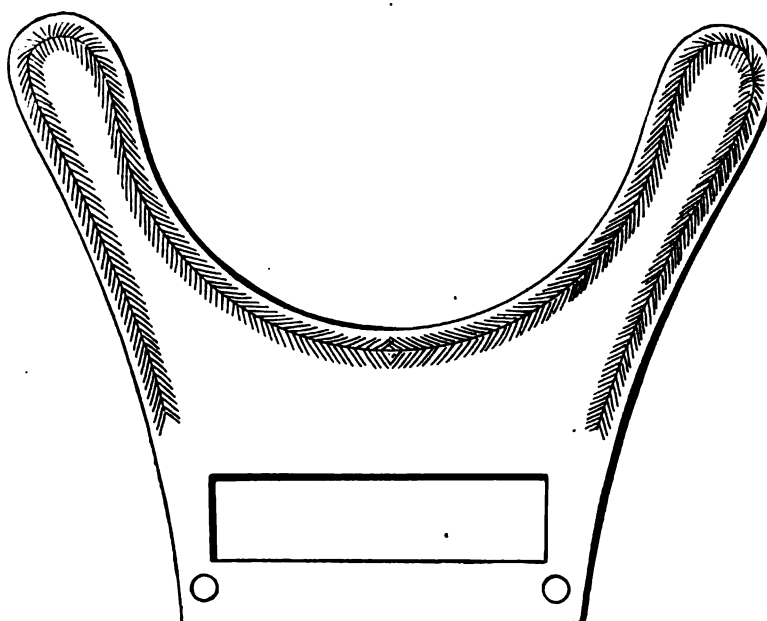
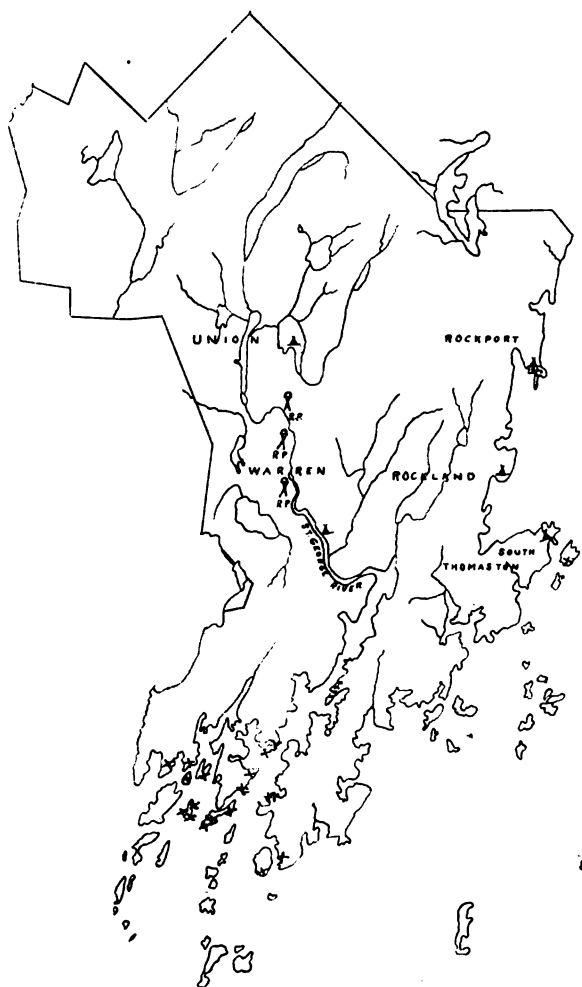


FIG. 121. A peculiar problematical form found in Holway's cemetery, Orland about 18 years ago. Owned by Mr. Sugden for some years. Present location unknown. Drawn from memory by Mr. Sugden. Full size. Material, banded slate.



FIG. 122. Types of Algonkian axes from Maine—for comparison with Red Paint People types in cutting tools. S. 1-5.



PLAN XXI
 OUTLINE MAP
 OF
 KNOX COUNTY, MAINE
 DRAWN BY
 E. O. SUGDEN
 1919



FIG. 123 Types of grooved cutting tools from Maine; for comparison with Red Paint People types. S. about 1-3.

ROSTER OF MEN WHO SERVED ON THE SEVERAL EXPEDITIONS

W. K. MOOREHEAD, ANDOVER, MASS., DIRECTOR OF ALL THE SURVEYS

1912

FRANCIS B. MANNING, Harvard University. In charge of field notes and specimens.
ARTHUR E. MARKS, Yarmouth, Maine. Assistant.
CHARLES A. PERKINS, Wakefield, Mass. Photographer.
JOHN MARTINEZ, New Mexico.
LUDWIG K. MOOREHEAD, Andover, Mass.
ELBERT PORTER, New York.
PHILLIPS BRADLEY, Harvard University.

SAM PARKS, Mattawamkeag, Maine. Riverman.
FRANK HAGAR, Moosehead, Maine. Guide.
ALBERT STAPLES, Orland, Maine. Cook.
CHARLES HUTCHINGS, Orland, Maine.
RALPH LORD, Bucksport, Maine.
C. VALENTINE SOPER, Orland, Maine.
DONALD F. ELDRIDGE, Orland, Maine.
WILLIAM HUTCHINGS, JR., Orland, Maine.
WILLIAM HUTCHINGS, SR., Orland, Maine.

1913

F. B. MANNING. Assistant.
E. O. SUGDEN, Orland, Maine. Surveyor.
CAPT. I. L. CRABTREE, Maine. In charge of navigation.
CHARLES HUTCHINGS.
HERBERT YOUNG, Connecticut.

RALPH LORD.
J. MARTINEZ, New Mexico.
L. K. MOOREHEAD.
ROBERT R. BISHOP, Mass.
ELIJAH GRANT, Maine.
W. W. TAYLOR, Mass.
C. VALENTINE SOPER, Maine.

1914

F. B. MANNING. Assistant.
E. O. SUGDEN. Surveyor.
SAM PARKS. Riverman.
L. K. MOOREHEAD. Photographer.
ELI BADGER, Maine. Guide.
JAMES RIDEOUT, Maine. Cook.

RALPH LORD. Guide.
DONALD APPLETON, Mass.
FRED LUND, Mass.
S. P. MOOREHEAD.
J. MARTINEZ.
R. BISHOP.
D. K. WRIGHT.

1915

E. O. SUGDEN. Assistant.
W. W. TAYLOR. Chauffeur.
W. HUTCHINGS, SR.
RALPH LORD,

S. P. MOOREHEAD.
WARREN TAYLOR, Ohio.
EDWARD SELDEN.
FRANK COWAN. Cook.
WALTER B. SMITH. Geologist (a few weeks).

1917 (Lake Champlain)

E. O. SUGDEN. Assistant.
RALPH LORD. Guide.
S. P. MOOREHEAD.

PROF. GEORGE H. PERKINS. Geologist (a few weeks).
W. HUTCHINGS, SR.

1918

E. O. SUGDEN. Assistant.
RALPH DORE. Cook.
MARSHALL ALLABEN, New York.

WALTER B. SMITH, Maine. Geologist (a few weeks).

ROSTER OF MEN

1919 (Connecticut Valley)

E. O. SUGDEN. Assistant.
W. HUTCHINGS, SR.
RALPH DORR. Cook.

NORWOOD ELDRIDGE, Maine.
JAMES BREWSTER, Mass.
FRED STOTT. (A few weeks).
DR. C. M. FUESS. (A few weeks).

At Waterville

GEORGE VALLIANT, Mass.

S. P. MOOREHEAD.
W. W. TAYLOR. Chauffeur.

1920

E. O. SUGDEN. Assistant.
RALPH DORR. Guide.
NORWOOD ELDRIDGE.
S. P. MOOREHEAD.

FRANK DORR.
WM. W. TAYLOR. Chauffeur.
MILTON TAYLOR.
W. B. SMITH. (A few weeks)

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